

OPERATION MECACAR ERADICATING POLIO

FINAL REPORT
1995-2000



OPERATION MECACAR: ERADICATING POLIO • FINAL REPORT 1995 - 2000



World Health Organization
Regional Office for Europe with
the Regional Office for the Eastern Mediterranean

2001

**EUROPEAN HEALTH21 TARGET 7
REDUCING COMMUNICABLE
DISEASES**

By the year 2020, the adverse health effects of communicable diseases should be substantially diminished through systematically applied programmes to eradicate, eliminate or control infectious diseases of public health importance

(Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998)

Keywords

POLIOMYELITIS

– prevention and control

IMMUNIZATION PROGRAMS

– organization and administration

EPIDEMIOLOGIC SURVEILLANCE

INTERNATIONAL COOPERATION

CONSUMER PARTICIPATION

EUROPE

ASIA, CENTRAL

COMMONWEALTH OF INDEPENDENT STATES

MIDDLE EAST

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Photo on front cover:

Starting the first day of NIDs, Lebanon 1995.

Photographer: Richard Franco

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ACRONYMS/GLOSSARY

AFP	acute flaccid paralysis
BASICS	Basic Support for Institutionalizing Child Survival
CDC	United States Centers for Disease Control and Prevention
DTP	diphtheria and tetanus toxoids and pertussis vaccine
EPI	Expanded Programme on Immunization
IFRC	International Federation of Red Cross and Red Crescent Societies
IMC	International Medical Corps
Mopping-up	focal mass campaigns in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered during house-to-house visits to all children in the target age group, regardless of previous vaccination history, generally with an interval of 4–6 weeks between doses
NGOs	nongovernmental organizations
NIDs	national immunization days; mass campaigns over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of previous vaccination history, generally with an interval of 4–6 weeks between doses
NA	not available
OPV	oral polio vaccine
OPV3 coverage	percentage of children vaccinated with the third dose of OPV by 1 year of age through routine immunization services
Sub-NIDs	sub-national immunization days in which a portion of the country was included
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

TRIBUTE

Millions and millions of children were vaccinated and monitored under sensitive surveillance through the efforts of thousands and thousands of national workers and with the assistance of hundreds of experts from around the world.

It was not only hard work but often dangerous work in some places.

We would like to show our great appreciation and pay respect to those who worked during Operation MECACAR and lost their lives in the process.

FOREWORD BY THE WHO DIRECTOR-GENERAL

Operation MECACAR (the coordinated poliomyelitis eradication efforts in Mediterranean, Caucasus and central Asian republics) reaffirms that tremendous public health accomplishments are feasible when national governments, WHO, the United Nations Children's Fund (UNICEF), and other external partners work together closely – in this case, with the primary goal of reaching every child with oral polio vaccine. Since 1995, 18 countries and areas with diverse political systems have met regularly to exchange information openly, and to plan sound strategies to fight infectious diseases together.

The success of Operation MECACAR is clear. Participants synchronized national immunization days (NIDs) against poliomyelitis so that children in mobile population groups could be immunized simultaneously. As a consequence, 15 of the participating countries and areas reported no indigenous poliomyelitis cases in 2000, with steep reductions in the number of cases in the others. In addition to the impact on poliomyelitis incidence, participants benefited from improved dialogue, the sharing of lessons learned, and joint planning.

Operation MECACAR has directly influenced the approach to poliomyelitis eradication worldwide. In western and central Africa, 17 countries have already synchronized their NIDs in the autumn of 2000. These countries used the lessons of Operation MECACAR and decided to unite in an effort to rid their children forever of the threat of poliomyelitis. This collaboration will undoubtedly lead to increased collaboration on other health goals.

The mechanism of Operation MECACAR could be adapted for use in other areas of the world, as we seek to certify poliomyelitis eradication in 2005. All countries and areas must work together to exchange information, maintain certification-standard surveillance and contain laboratory poliovirus stocks. In addition, the MECACAR process provides a forum to coordinate policy for stopping poliomyelitis immunization.

As we strive for health equity in the twenty-first century, we should take to heart the lessons of Operation MECACAR. Diverse partners can unite to achieve seemingly insurmountable health goals. By using sound technical strategies and working together, we can stop infectious diseases in their tracks. Not only infectious diseases but also risk factors such as environmental pollution and tobacco use cross national borders to harm health. Operation MECACAR provides a valuable process by which to approach other health concerns. Obviously, not all problems can be tackled simultaneously. Setting priorities, while pursuing measurable and achievable objectives, is the key

to monitoring and evaluating progress towards improving the health of our children and our communities.

Participants in Operation MECACAR are to be commended for their transparent and successful efforts, which have created a forum for partnership. Organizers of Operation MECACAR are to be commended for their vision, which has united health authorities and peoples around a common priority – ensuring that the health of our children improves. Let us continue to use and build upon the fine example provided by Operation MECACAR.



A handwritten signature in blue ink, appearing to read "G. H. B." with a stylized flourish at the end.

Dr G H B
WHO Director-General

FOREWORD BY THE WHO REGIONAL DIRECTORS

The importance of Operation MECACAR cannot be stressed enough.

The organisms causing infectious diseases that are easily transmitted by respiratory and faecal-oral routes, such as poliomyelitis, are not confined by national boundaries; neither do they affect only limited sections of the populations at risk.

Yet public health, including the control of infectious diseases and epidemics, has usually been managed on a national scale, each country developing its own capacity to react to infections and to reach and protect those communities at risk. This is also true of a country's response to international initiatives, such as those developed to eradicate poliomyelitis by the year 2000. Within each country, responsibility for public health has predominantly rested only with the ministry of health, too often beset with problems of limited financial and personnel resources.

Operation MECACAR has demonstrated that these limitations – too circumscribed a response to a disease affecting people across all borders; inadequate, often undefined national resources to tackle the problem – can be overcome. Its success demanded and received clear technical and management leadership, well defined objectives, sound technical policies, but especially strong partnership and transparent communication, both within countries but also between countries and with international support agencies.

For more than 5 years, 18 countries and areas harmoniously worked together, sharing experiences, collectively making more and more rapid progress than they would have done separately. All participants conducted national immunization days, synchronized with their neighbours. These were conducted each year, effectively protecting their own populations by together tackling infectious disease at its source, even if this was outside their own national boundaries.

The success of Operation MECACAR was based on effective coordination meetings, held annually, but with discussions extended to subregional and cross-border meetings. One of the most striking features of these meetings was the consistent participation of those officials most immediately involved and responsible for the programme, so that experiences were shared, discussions held and solutions were reviewed to ensure relevance, practicality and operational feasibility.

The results of Operation MECACAR have been excellent. Fifteen MECACAR countries and areas, including all those in the WHO European Region have apparently stopped indigenous wild

poliovirus transmission by 2000. In the other three MECACAR countries, incidence is greatly reduced, even in Afghanistan, where it might have been reasonable to expect that civil conflict would have prevented an effective programme of immunization. Even the fighting was stopped for the NIDs!

Surveillance has been much developed and data are freely exchanged. A network of accredited laboratories provides reliable diagnostic support and allows individual strains of virus to be traced whenever cases occur.

It can now be said, with confidence, that all portions of all the 18 participating countries and areas and all populations within them have been reached and included in effective activities needed to eradicate poliomyelitis. Within countries, all elements of society – national leaders, religious heads, leading community figures, stars of the media and the sporting world – have participated in this health initiative. In addition to the armies of health workers, the staff of many other ministries, women's and children's groups and nongovernmental organizations have been fully involved.

Infectious diseases will continue. They will infect populations across borders. They will probably, on occasion, be too extensive for health staff alone to tackle effectively. Operation MECACAR has clearly demonstrated that it is possible to tackle epidemics and deficiencies in health support with a truly cooperative, international initiative. The international agencies, the countries themselves and their agencies, communities and residents surely want this and have demonstrated that they can all play a critical partnership role in achieving it.

We cannot afford to ignore the lessons learned through Operation MECACAR.



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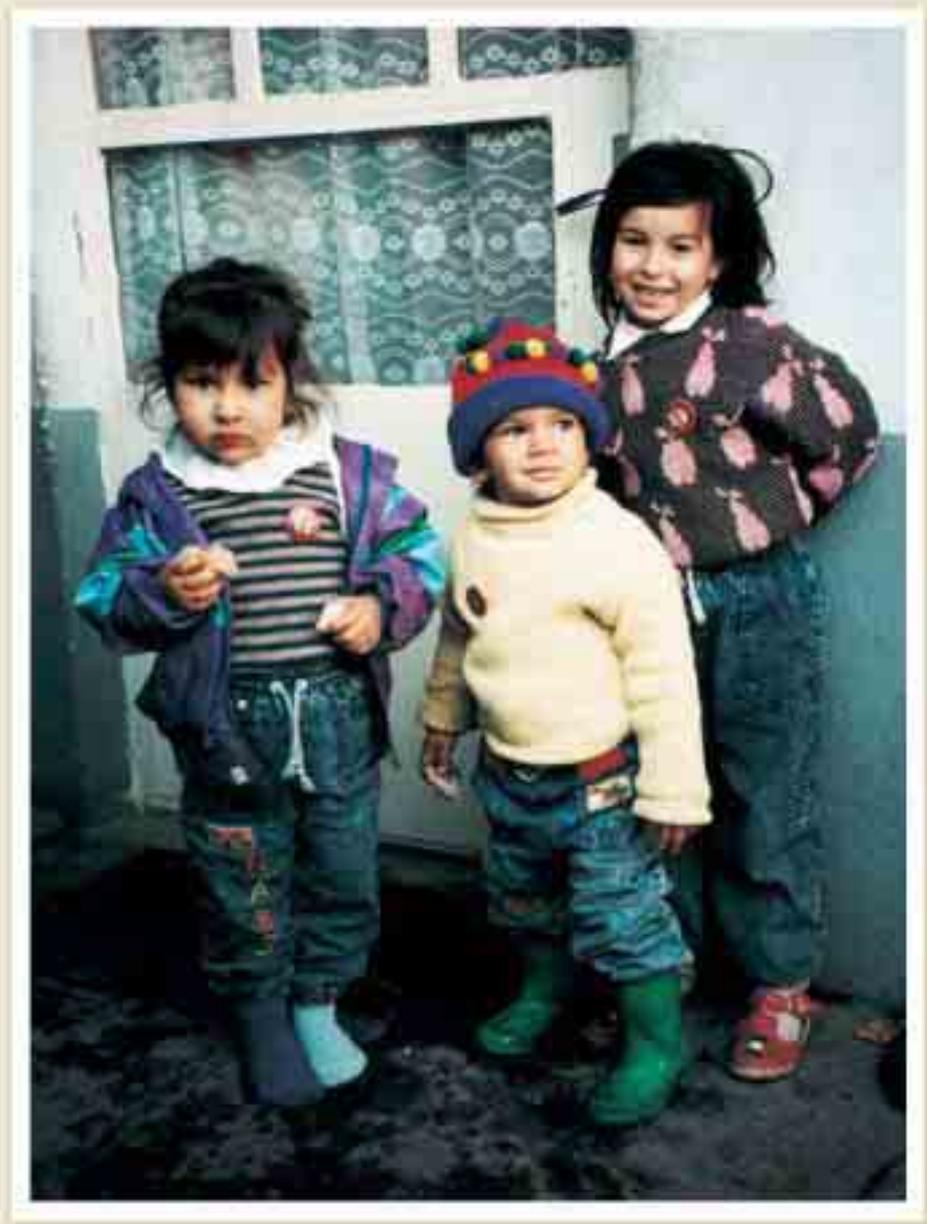
Dr H A. G
*WHO Regional Director for
the Eastern Mediterranean*



A handwritten signature in blue ink, appearing to read 'M. D.' with a flourish.

Dr M D
*WHO Regional Director
for Europe*

Roma children
after NID
immunization,
Bulgaria 1995



BACKGROUND

GLOBAL POLIOMYELITIS ERADICATION

In the 1950s and 1960s, the development of effective vaccines against poliomyelitis (or polio) allowed many countries to control the disease and to eliminate the risk of widespread epidemics. Most countries introduced the vaccines as a part of their routine schedule for infant immunization, but a small number, notably Czechoslovakia and Cuba, demonstrated that administering oral polio vaccine (OPV) in mass campaigns resulted in the rapid and complete disappearance of clinical poliomyelitis.

In 1984, the Directing Council committed the Pan American Health Organization to the eradication of poliomyelitis from the western hemisphere by 1990. Effective strategies, including the use of national immunization days (NIDs), were developed and facilitated rapid progress towards this goal. Based on evidence of this progress, and in view of the outstanding development of national immunization programmes under the Expanded Programme on Immunization (EPI), the Forty-fourth World Health Assembly, meeting in 1988, established a target for the global eradication of poliomyelitis by the year 2000.

REGIONAL POLIOMYELITIS ELIMINATION

The countries and areas subsequently involved in Operation MECACAR form part of two separate regions of WHO: the European and the Eastern Mediterranean. Member States of both regions are committed to poliomyelitis eradication, as reflected in their regional committee resolutions on this subject.

Operation MECACAR involved close coordination between the two regions, with common strategies and similar monitoring of progress in all areas involved. It was, therefore, a single and unified campaign, involving all countries and areas equally. In reviewing background factors and progress within limited geographical areas, however, it is practical and simpler to analyse each region separately. The countries and areas involved in Operation MECACAR and their relationship to a WHO region are shown in Fig. 1.

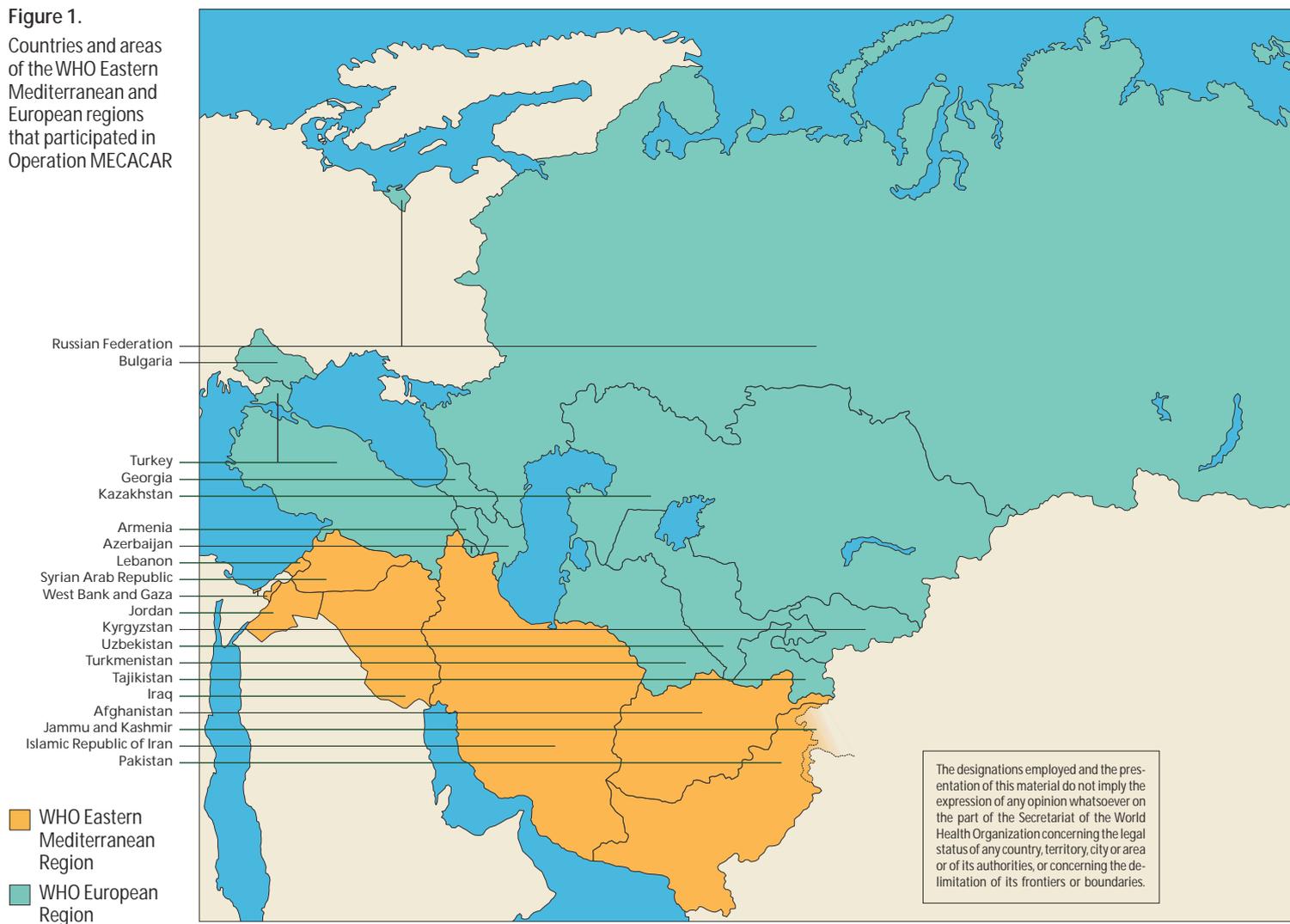
European Region

In 1985, the WHO Regional Committee for Europe established the reduction of communicable disease as its fifth regional target. This target specified that:

By the year 2000, there should be no indigenous cases of poliomyelitis, diphtheria, neonatal tetanus, measles, mumps and congenital rubella in the Region and that there should be a sustained and continuing reduction in the incidence and adverse consequences of other communicable diseases, notably HIV infection.

Figure 1.

Countries and areas of the WHO Eastern Mediterranean and European regions that participated in Operation MECACAR



In 1989, this target was confirmed by the thirty-ninth session of the Regional Committee, which specifically endorsed the target of regional poliomyelitis elimination by 2000 and approved the plan of action aimed at its achievement.

By 1994, a full course of polio vaccine, administered as routine immunization in the first year of life, was being received by 82–83% of children in the Region. The number of countries reporting over 80% coverage had, however, declined from 31 in 1991 to 26 in 1994 of 51 Member States. It was also recognized that, even within countries with high levels of routine immunization, cer-

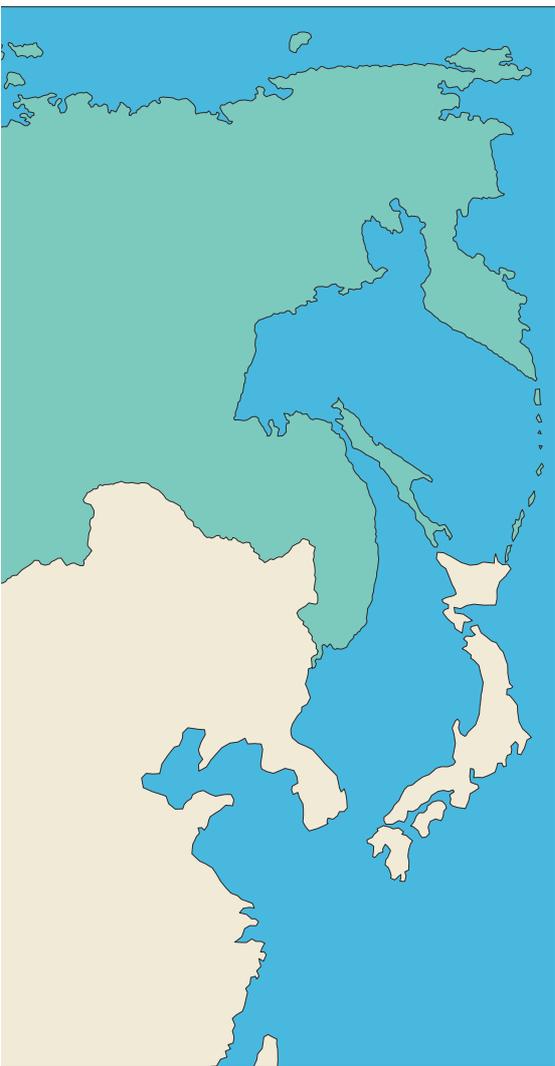
tain areas were recording coverage markedly lower than national averages. The break-up of the former USSR had led to temporary vaccine shortages in several countries, with consequently reduced immunization coverage.

Although surveillance for poliomyelitis was unsatisfactory, endemic poliovirus transmission was still thought to be occurring in 11 countries across a wide area from Turkey to Tajikistan, with frequent major epidemics affecting countries in which numbers of children susceptible to poliomyelitis had accumulated. It was this situation that led to the germination of the concept for coordinated action, a concept that developed to include two WHO regions and became “Operation MECACAR”. This concept was developed further by the Regional Office for Europe along with, and supported by, WHO headquarters polio eradication staff, the coalition of international partners and the Regional Office for the Eastern Mediterranean.

Eastern Mediterranean Region

The thirty-fifth session of the Regional Committee for the Eastern Mediterranean, meeting in 1988, adopted a resolution committing Member States to aim for poliomyelitis elimination by the year 2000. A regional plan of action for poliomyelitis eradication was adopted in 1989.

In 1993 and in subsequent years, the Regional Committee reviewed progress and issued resolutions urging the 22 Member States to fully implement strategies required for poliomyelitis eradication.



In the Eastern Mediterranean Region, during the decade leading up to Operation MECACAR, the development of increasingly effective national immunization programmes had produced dramatic improvements in rates of childhood immunization, for example immunization coverage with the third dose of oral polio vaccine by 1 year of age (OPV3 coverage) had increased from 30% in 1984 to over 80% in 1993 in the Region overall. By 1994, most countries and areas in the Region had developed and been able to sustain effective childhood immunization services, while NIDs had been successfully conducted in some countries of the Region.

Yet, for widely differing reasons, three countries that later committed to Operation MECACAR were facing considerable difficulties in 1994. Continuing civil conflict in Afghanistan had prevented the establishment of effective nationwide immunization and surveillance systems. In Iraq, the Gulf War and its consequences had severely affected a previously effective immunization programme. In Pakistan, major difficulties had been encountered in sustaining achievements beyond 1990; in fact, immunization coverage declined to reach its lowest level in 1995, before improving in 1996.

While surveillance for poliomyelitis became increasingly effective, sub-national reporting was still far from complete and poliomyelitis remained much underreported. By 1994, although the number of cases continued to decline, reflecting high routine and NID immunization achievements, poliomyelitis was still reported in most countries and areas of the Region, and was of especially high incidence and widespread within the eastern countries of Pakistan and Afghanistan (assumed). Therefore, the coordinated action proposed as Operation MECACAR was considered an excellent opportunity.

EPIDEMIOLOGICAL SITUATION

Eastern Mediterranean Region

In the Eastern Mediterranean Region, by 1994, effective routine immunization programmes and mass immunization campaigns had controlled the incidence of poliomyelitis in three countries and areas adjacent to countries of the European Region – the Syrian Arab Republic (reduced to a very low incidence), Iraq and the Islamic Republic of Iran – and also in Lebanon and in the Palestinian Self-Rule Areas. Before and following energetic control of an epidemic mainly affecting migrant workers of Pakistan origin in 1992 and with high routine immunization coverage for several years plus supplementary immunization, Jordan had apparently interrupted poliovirus transmission.

Poliomyelitis was still widespread in Pakistan in 1994, although the number of reported cases had been reduced by a mass immunization campaign. There was also an assumed high incidence in Afghanistan, where the health infrastructure had been disrupted for many years and disease

control activities were not able to operate effectively throughout the entire country. Neighbouring countries were experiencing repeated importation of poliomyelitis from this transmission pool. As noted above, the 1991 Gulf War in Iraq had caused a breakdown in its previously effective routine immunization programme of infants, with a consequent marked increase in the number of poliomyelitis cases reported and continuing transmission in the years up to 1994.

European Region

Following the first introduction of polio vaccines in the 1950s and 1960s, a low incidence of poliomyelitis had been reported throughout the European Region for many years, with most countries of western, northern and central Europe having reported zero cases since the mid-1980s or earlier.

After years of declining incidence between 1990 and 1994, the annual number of reported cases had subsequently remained at around 200 or more each year. This total figure comprised two components: persisting endemic transmission in a small number of countries, most notably Turkey, and the occurrence of major epidemics in countries previously reporting few, if any, cases in the preceding years. Such epidemics had occurred in Tajikistan (115 cases in 1991), Azerbaijan (182 cases in 1990; 69 in 1993) and Uzbekistan (117 cases in 1994). In each case, the epidemic was tackled vigorously and the number of reported cases fell dramatically, only for another epidemic to occur elsewhere.

In 1993 and 1994, 11 countries of the European Region had reported poliomyelitis cases to WHO and/or were still considered to be polio-endemic. In addition to those countries which would ultimately join Operation MECACAR, Ukraine and the Federal Republic of Yugoslavia had cases of virologically confirmed poliomyelitis before 1994 and continued to report cases of poliomyelitis in 1994 (without laboratory confirmation). At that time, with relatively few cases being reported and most countries of western, northern and central Europe reporting high routine immunization coverage of infants, the disease was not widely perceived as a major public health risk to the regional population as a whole. Yet, based on the strategies being implemented at that time and with the wide distribution of cases, it appeared probable that low-level wild poliovirus transmission would persist indefinitely, with occasional major epidemics. With those strategies alone, it was therefore unlikely that the target of poliomyelitis elimination from the European Region would be achieved by the year 2000.

In both regions, it was clear that well-coordinated, synchronized mass immunization campaigns by neighbouring countries and areas that were either polio-endemic or at high risk of importations would have great effect; such campaigns would not only reduce the number of cases but would also confine poliovirus transmission to a more limited geographical area and be a major step towards accelerating poliovirus elimination.

Based on the strategies being implemented in 1994, it was unlikely that the target of poliomyelitis elimination from the European Region would be achieved by 2000.

Waiting for NIDs to begin, Kyrgyzstan 1995



Remote area vaccination in northern Iraq, 1998 (right).

Preparing for vaccine transport to remote areas, Afghanistan 1995 (far right).



An equally important aspect was that, without such an innovative approach, it appeared probable that in many countries existing policies would not be sufficient to secure the targets of regional poliomyelitis eradication and global eradication by the year 2000.

POLIOVIRUS CIRCULATION

At the time that Operation MECACAR was planned, limited information was available on the circulation of different strains of polioviruses within the target area. The information available and that which became available later did in fact strongly justify the decision to implement mass immunization coordinated between countries and regions.

When OPV was first introduced on a massive scale to the countries of the European Region, the circulation of wild poliovirus was widely curtailed, apparently leading to rapid virus elimination in most western countries. There is now evidence to suggest that elimination of Types 1 and 2 wild poliovirus occurred in the countries of eastern Europe, including most of the former Soviet Union.

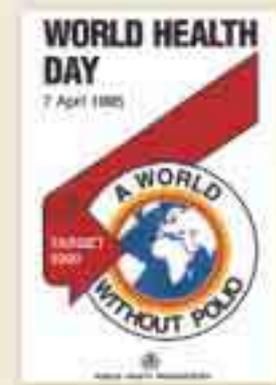
In the early 1990s, three families (genotypes) of Type 1 poliovirus had been isolated from cases in MECACAR countries of the European Region. Their range of genetic variability suggests that all three genotypes originated from relatively recent introductions. Genomic sequencing of viral RNA segments has demonstrated a close relationship with polioviruses currently or recently circulating in the Middle East and in Pakistan/India.

Epidemics in 1991 in Tajikistan, in 1992 in Ukraine, in 1994 in Uzbekistan and in 1995 in Chechnya of the Russian Federation, were all caused by a closely related Type 1 virus, the "T" (Tajikistan) virus. A similar virus has been isolated in more recent years in Pakistan and similar isolates, probably from importations, had been isolated in Jordan and Malaysia. A different Type 1 virus, the "A" (Azerbaijan) virus was isolated from Azerbaijan and Georgia in 1991, the Islamic Republic of Iran in 1993 and Iraq in 1994. This virus is related to older middle eastern strains. A third genotype Type 1 virus, the "G" (Georgia) virus was isolated from Georgia in 1991 and the Russian Federation in 1994. This virus is closely related to the "A" virus.

As the poliomyelitis eradication initiative has developed, genetic sequencing has repeatedly demonstrated the ease with which polioviruses cross international borders, for example with similar viruses being identified, often in different years, in Iraq and Turkey, in the Islamic Republic of Iran and Tajikistan, and in Afghanistan and Pakistan.

By contrast, isolates of Type 3 viruses in the European Region fall into four distinct groups, showing a much wider variability, strongly suggesting continuing transmission within the countries of the Region for many years. These are unlikely to have been the result of recent importations.

Generating community interest and motivation for public participation in NIDs, Iran 1995



Newer information on the genetic sequencing of more recent virus isolations from Afghanistan, Pakistan and India have indicated that there are distinct shared reservoirs of virus in Afghanistan and Pakistan and separate genotypes circulating in India. Nonetheless, there also have been different circulating genotypes identified in Afghanistan and in Pakistan.

These findings indicate that wild polioviruses have circulated among the very different countries and areas of both the European and Eastern Mediterranean Regions with ease and lack of restriction. It is clear that elimination of poliomyelitis in the geographical area covered by MECACAR necessitated a programme capable of achieving synchronized high immunization coverage and effective surveillance across borders and between regions. Operation MECACAR fulfilled that requirement.

INITIATING OPERATION MECACAR

The theme of World Health Day on 7 April 1995 “Target 2000 – A World Without Polio” acted as a stimulus to develop effective national and international programmes aimed at meeting the poliomyelitis eradication target. The idea to conduct coordinated NIDs in endemic countries with common borders was already developing in the Regional Office for Europe. With the upcoming 1995 World Health Day, Operation MECACAR was developed as a larger process for two regions and supported by the major partners.

In conjunction with that World Health Day, 18 geographically contiguous countries and areas in Europe, central and southern Asia and in the Middle East committed themselves to conducting coordinated and synchronized NIDs using OPV. The programme was designated as Operation MECACAR (MEditerranean, CAucasus and Central Asian Republics). These areas related to eight countries and areas of the Eastern Mediterranean Region and ten countries of the European Region of WHO. Throughout the years of Operation MECACAR, participating countries and areas of the Eastern Mediterranean Region remained the same, while in the European Region the Russian Federation replaced Bulgaria in 1996 after the first NIDs in 1995. A number of additional countries affected by epidemics of poliomyelitis – Albania, the Federal Republic of Yugoslavia and Greece – and other countries seeking to boost their population immunity conducted supplementary immunization campaigns often in conjunction with Operation MECACAR, but not as an integral part of the initiative.

In 1994, the participating countries and areas of the Eastern Mediterranean Region, the Islamic Republic of Iran, Iraq, Jordan, Lebanon, Pakistan and the Syrian Arab Republic, had reported 691 (69%) of the regional total of 1015 reported cases for the same year. The participating European Region countries, Armenia, Azerbaijan, Kazakhstan, Tajikistan, Turkey, Turkmenistan and Uzbekistan, had reported 206 (89%) of the regional total of 231 polio cases.

Based on experience that conducting NIDs in the low season of poliovirus transmission markedly increased their effectiveness, the representatives of all participating countries and areas meeting in Ankara, Turkey in January 1995 agreed to schedule either the first or the second round of their campaigns in April around World Health Day, 7 April 1995, dedicated to poliomyelitis eradication.

The representatives of all participating countries and areas agreed to schedule one round of their campaigns around World Health Day dedicated to polio eradication, 7 April 1995.

Critically, at this first coordination meeting, representatives of the MECACAR Member States committed participating countries and areas to conducting further synchronized NIDs in 1996 and 1997, to the introduction of “mopping-up” strategies of focal supplementary immunization activities where indicated by surveillance data, developing national surveillance for acute flaccid paralysis (AFP) and maintaining high routine immunization coverage. These critical resolutions changed the nature of Operation MECACAR from being a one-time mass campaign to becoming a structured, coordinated and technically sound programme aimed at the early achievement of poliomyelitis elimination throughout the target area. It was also agreed that Operation MECACAR should be time limited, terminating in its proposed form after three years. Discussion at subsequent coordination meetings would later propose extension as “Operation MECACAR Plus”.

The first coordination meeting also stressed the need for the NIDs to be of uniform high quality. This requirement necessitated and led to sound planning, the involvement of national leaders at the highest level and appropriate leaders at each successive administrative and community level, the effective use of the media and the coordinated involvement of all relevant sectors in government. In addition, nongovernmental organizations (NGOs) and all national and international agencies with an interest in assisting health development in participating countries and areas were integrally involved.

In implementing Operation MECACAR, it was seen to be important that the planning, approaches and activities should be compatible with the different organizational structures and cultural requirements of the widely differing communities living within such a vast geographical area. That this was realized without serious dispute testifies to the significant achievement of the planning by responsible national and international officials.

Four closely interrelated elements constituted Operation MECACAR, each being important if the primary and secondary objectives of the initiative were to be realized:

- strengthening of the partnership aimed at achieving poliomyelitis eradication in the European and Eastern Mediterranean Regions, between and within all countries and areas;
- conducting coordination meetings, in which planning was developed, progress reviewed and problems identified, technical issues discussed, resource needs identified and solutions sought;

- planning and conducting of coordinated and synchronized NIDs; and
- further developing effective, broadly based programmes, utilizing WHO-recommended strategies which would result in and confirm the final eradication of poliomyelitis. These programmes should essentially include the development of effective virological surveillance for all cases of childhood AFP.

CONFLICT SITUATIONS

The area covered by Operation MECACAR includes a number of countries and areas where internal disturbances or armed conflicts have taken place during the last decade. This includes civil wars in major areas of Afghanistan and Tajikistan; armed conflicts or internal disturbances in Azerbaijan, Georgia, Iraq, and some territories of the Russian Federation in the northern Caucasus; and tensions along the borders of Iraq, the Islamic Republic of Iran, the Syrian Arab Republic and Turkey.

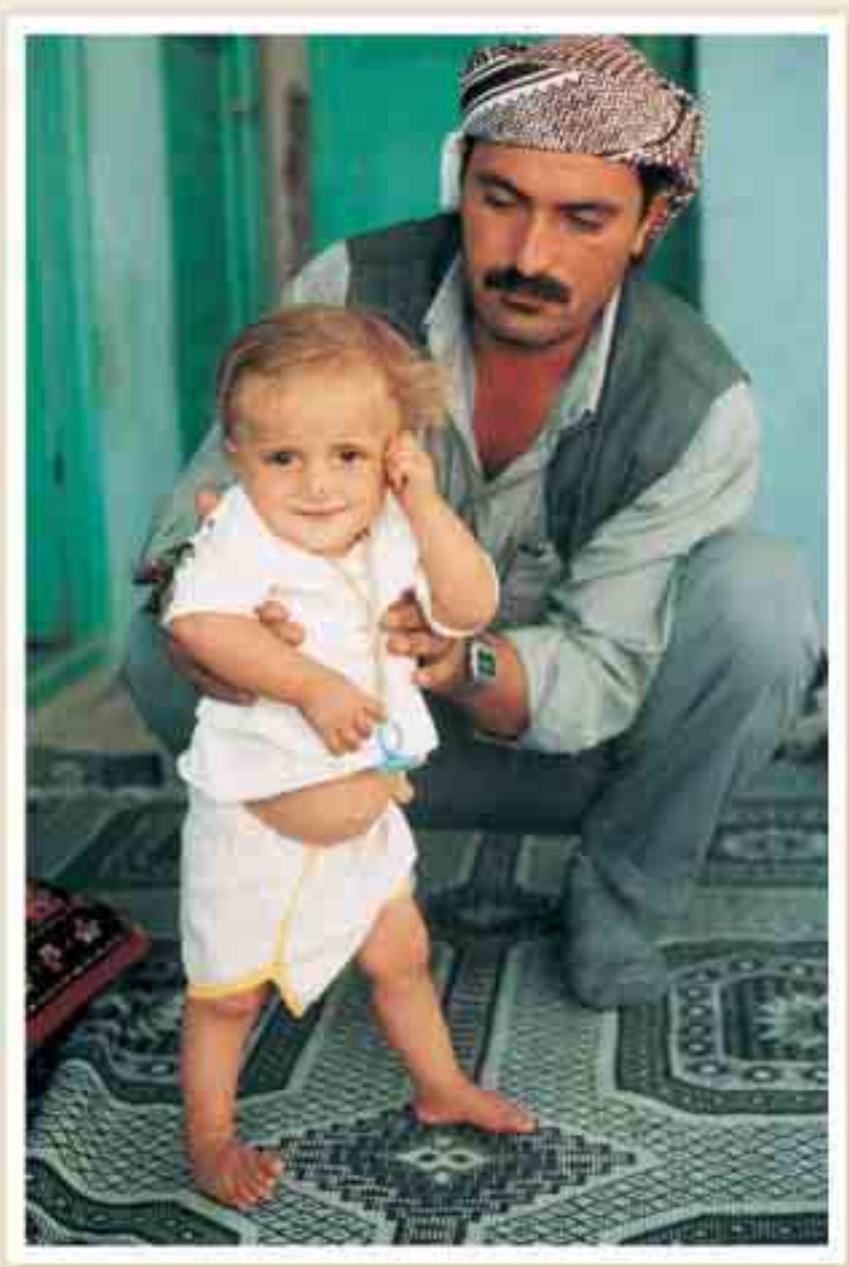
Such disputes, whatever their justifications, often made it difficult or even impossible to implement carefully planned public health programmes such as for immunization. The progress of Operation MECACAR and its potential for effective planning of activities was repeatedly threatened by such conflicts. Contingency plans were developed and appropriate activities, such as “days (or weeks) of tranquillity”, were proposed to enable procedures for effective immunization to take place. Such breaks in fighting were implemented in Afghanistan during campaigns from 1994 onwards and in Tajikistan during the 1995 NIDs.

It is to the credit of all those involved that these conflicts did not seriously delay the overall outcome of Operation MECACAR, except in Afghanistan. Indeed, resolution of the difficulties faced by delivering immunization services often offered hope of the eventual wider resolution of the conflicts.

BORDER AREAS

Even if armed conflict is avoided, tensions have often affected efficient delivery of health services in border or other population subgroups. During 1997–1998, prevention of cross-border transmission and distant importation of wild poliovirus received special attention. Coordinated border activities between neighbouring countries and areas of the Eastern Mediterranean and European Regions were organized. Special immunization and surveillance activities were introduced in selected border areas of the Islamic Republic of Iran, Iraq, the Syrian Arab Republic and Turkey during October–November 1997 to 2000. Similar considerations were made for the border areas of Afghanistan, the Islamic Republic of Iran and Pakistan, and to a lesser extent, border areas of Tajikistan, Turkmenistan and Uzbekistan with Afghanistan.

Child with
paralysis later
confirmed as
type 1 polio in
Sirnak province,
Turkey 1998



OBJECTIVES OF OPERATION MECACAR

Because of the vast geographical area covered, the fact that two WHO regions were involved and the need for the active participation of 18 countries and areas, MECACAR was a complex technical operation. Its successful management necessitated close and frequent communication and effective coordination between partner agencies and with the ministries involved in all participating countries and areas.

It was important that all areas and agencies agreed and accepted the objectives towards which Operation MECACAR was targeted. This was achieved without serious disagreement and without any disruption of planned activities, reflecting the outstanding commitment of all governments and agencies concerned.

PRIMARY OBJECTIVES

The primary objective of Operation MECACAR was to provide a mechanism to institute and coordinate activities, predominantly NIDs, that would rapidly lead to poliomyelitis elimination throughout all participating countries and areas.

Inherent within this primary objective was the potential for technical development within countries and areas, leading to the further implementation of effective health-promoting activities. It was also expected that a stronger partnership could be developed among the various agencies involved and between the two WHO regions.

Successfully conducted NIDs, coordinated among countries and areas, had the realistic potential to create extensive polio-free areas which, in turn, would reduce the possibility of importations to individual countries and which would prove to be a major contribution to eventual regional elimination and global poliomyelitis eradication.

SECONDARY OBJECTIVES

A number of secondary objectives were also defined at the onset, while others became evident and potentially achievable as Operation MECACAR progressed. These included the following:

Technical implementation

- development and monitoring of AFP surveillance in participating countries and areas;
- development and use of a WHO-accredited laboratory network, with improved coordination between epidemiological and laboratory staff; and
- advancement of reporting systems, information analysis and feedback, including sharing of epidemiological information between Member States and with international agencies.

General coordination

- promotion of partnership between and among Member States and agencies, with increased awareness of the needs, potential for availability of funds and effective use of resources;
- production of data for eventual certification of poliomyelitis eradication; and
- promotion of a capacity for international cooperation in the future control of communicable diseases.

OPERATION MECACAR COORDINATION MEETINGS

Although the principles of Operation MECACAR were devised by international staff working in the WHO regional offices in close association with their colleagues in UNICEF, Rotary International PolioPlus and the Centers for Disease Control and Prevention (CDC), it was through the conduct of the coordination meetings and the contribution of the participants that its true potential was developed.

Each meeting played a vital role as a forum for allowing technical discussion, defining logistical needs, ensuring effective planning and further developing coordination.

The meetings were attended by representatives of the participating countries and areas, usually senior officials from ministries of health and, always, national immunization programme managers. WHO and UNICEF advisers from regional offices, headquarters and staff based in participating countries and areas provided the secretariat. Other organizations were strongly represented, notably Rotary International, the CDC, Basic Support for Institutionalizing Child Survival (BASICS), the US Agency for International Development (USAID), the International Federation of Red Cross and Red Crescent Societies (IFRC) and the International Medical Corps (IMC).

In addition, observers from the host country attended each meeting, while representatives of the regional commissions for the certification of poliomyelitis eradication and scientists from laboratories within the WHO network participated in a number of meetings.

In total, six coordination meetings were held. Their agendas modified as time passed, moving from an initial emphasis on planning to greater stress on review of progress, evaluation and identification of areas of weakness, the development and monitoring of AFP surveillance and improved use of the laboratory network.

By the end of each meeting, progress had been reviewed, technical and logistic requirements discussed, and conclusions and recommendations developed. Reports of meetings, with the recommendations, were circulated to all participating authorities.

While these Operation MECACAR coordination meetings concentrated on technical planning and identification of needs, especially for the implementation of NIDs, further agency meetings were conducted as interagency coordination committees at the regional and national levels, coordinating ideas and financial resources and seeking commitments to meet needs. These two types of meetings were complementary and each type provided major support to national activities.

In view of the critical role of the Operation MECACAR coordination meetings, and as a record of the development of strategies and monitoring of progress, each is summarized below.

FIRST COORDINATION MEETING OF OPERATION MECACAR

Ankara, Turkey, 29–30 January 1995.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Pakistan, Syrian Arab Republic.

WHO European Region: Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan, Uzbekistan.

Partner organizations: BASICS, CDC, IFRC, Rotary International PolioPlus, UNICEF, USAID, WHO.

Context of the first meeting

Pakistan had reported over 1800 cases in 1993, but the reported incidence had been dramatically reduced to 527 in 1994 following NIDs. Similarly, the Islamic Republic of Iran, like most countries of the Eastern Mediterranean Region, had conducted a highly effective NID with conspicuously successful intersectoral cooperation, while Afghanistan had conducted its first multiantigen mass campaign. In Tajikistan, a major epidemic in 1991 had been controlled, although cases were still occurring, with 26 in 1994. Azerbaijan had reported 69 cases in 1993, reduced to only 16 in 1994. Conversely, Uzbekistan had reported 68 cases in 1993 and 117 in 1994.



Tracking early progress and planning for the next immunization rounds at the Second Coordination Meeting, Iran 1995



First local NID immunization, Kazakhstan 1995

Main findings

- most participating countries and areas had achieved 80% immunization coverage, but in some, civil unrest or uncertain vaccine supplies had resulted in declining achievement;
- in 1994, the Islamic Republic of Iran, Lebanon, Pakistan, the Syrian Arab Republic and Uzbekistan had successfully conducted NIDs;
- surveillance was established, but required substantial strengthening; and
- countries and areas participating in Operation MECACAR were committed to conducting NIDs during March-May 1995.

Key recommendations

- there must be commitment to NIDs in 1995, 1996 and 1997;
- one round of NIDs to be coordinated on/around 7 April 1995;
- countries to seek strong commitment to NIDs at the highest level;
- special efforts to be made to reach migrant and other hard-to-reach populations;
- all sectors of government and community to be involved in the NIDs;
- particular use of social mobilization and effective use of the media; and
- prompt reporting of results within one month after the second round.

SECOND COORDINATION MEETING OF OPERATION MECACAR

Tehran, Islamic Republic of Iran, 27–28 September 1995.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Palestinian Authority, Syrian Arab Republic.

WHO European Region: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan, Uzbekistan.

Partner organizations: Rotary International PolioPlus, UNICEF, WHO.

Context of the second meeting

The first NIDs were followed by a dramatic reduction in poliomyelitis in most of the participating countries. Only Turkey and Pakistan were reporting significant numbers of endemic cases, although Afghanistan was unable to document incidence accurately. Chechnya in the Russian Federation, after a period of virtually absent routine infant immunization services (with consequent extremely low polio vaccine coverage), was suffering a major epidemic of poliomyelitis, with 150 cases ultimately reported in 1995.

Main findings

National immunization days:

- the first round of Operation MECACAR involved 18 countries and areas and was implemented successfully in March–May with all participating countries and areas achieving high coverage (more than 90%); and
- additional resources had been mobilized at the national level.

Incidence of poliomyelitis:

- in 1994, in the Eastern Mediterranean Region, 11 countries and areas reported indigenous polio cases, although Somalia and Afghanistan were unable to report. Reported cases in MECACAR countries and areas of the Region decreased from 1985 cases in 1993 to 691 in 1994;
- in the European Region, 11 countries reported indigenous cases with 74 geopolitical units reporting cases, compared with 105 in 1992.

Surveillance for cases of acute flaccid paralysis:

- in the Eastern Mediterranean Region in 1994 with an overall non-polio AFP rate of 0.49, 74% of cases were submitted to virological investigation;
- completeness of monthly reporting to the European Region was 90–96%, with the reported non-polio AFP rate varying from 0.3 to 0.8 per 100 000 children in the MECACAR countries.

Key recommendations

- continuation of NIDs in 1996 and 1997 and countries and areas with significant cross-border migrations to conduct well-synchronized NIDs;
- focus on developing efficient surveillance; and
- consideration of the need for mopping-up operations in high-risk areas.

THIRD COORDINATION MEETING OF OPERATION MECACAR

Tashkent, Uzbekistan, 14–16 October 1996.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Pakistan, Palestinian Authority, Syrian Arab Republic.

WHO European Region: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkey, Turkmenistan, Uzbekistan.

Partner organizations: BASICS, CDC, IFRC, Rotary International PolioPlus, UNICEF and WHO.

The waiting room
and vaccination
room during NIDs,
Uzbekistan 1994



Context of the third meeting

The success in the MECACAR participating areas was evident, with a greatly reduced incidence of poliomyelitis. To the west of the MECACAR area, however, a major epidemic occurred, with ultimately 138 cases reported from Albania in 1996, 24 from the Federal Republic of Yugoslavia (reported from Kosovo, an area with substantial civil unrest), and 5 cases from Greece. Mass immunization outbreak response activities rapidly gained control. In Turkey, areas known previously to have had low routine immunization coverage were still reporting polio cases, while endemic poliomyelitis remained widespread in Pakistan and Afghanistan, with cases in border areas of the Islamic Republic of Iran.

Main findings

National immunization days:

- in 1996, all MECACAR countries and areas in both regions joined by the Russian Federation participated in synchronized NIDs; in 1996, outside MECACAR, Albania, the Republic of Moldova and Ukraine also conducted NIDs, and the Federal Republic of Yugoslavia conducted sub-NIDs.

Incidence of poliomyelitis:

- in the Eastern Mediterranean Region, 647 cases were reported by MECACAR countries and areas in 1995;
- in 1995, 206 cases of polio were reported in the European Region, 150 being from the Russian Federation, almost exclusively from Chechnya; and
- in 1996, an epidemic of ultimately 138 cases occurred in Albania and also involved subgroups in the Federal Republic of Yugoslavia and Greece.

Surveillance for cases of acute flaccid paralysis:

- in the Eastern Mediterranean Region, the overall reported non-polio AFP rate increased from 0.49 in 1994 to 0.70 in 1995 and 0.71 in 1996;
- in 1995, surveillance data in the European Region were reported for 19 countries; and
- overall non-polio AFP rate per 100 000 children in the European Region was 0.24 in 1995, increasing to 0.53 in 1996.

Key recommendations

- a commitment of all countries and areas to continuing NIDs in 1997 conducted in synchrony, with the exception of Pakistan, which coordinated the timing of NIDs with India because of differing seasonal occurrence;
- highest 1997 priority to strengthen AFP surveillance, including meeting key performance indicators; and
- mopping-up in 1997 to be guided by the results of AFP and virological surveillance.

FOURTH COORDINATION MEETING OF OPERATION MECACAR

Rome, Italy, 20–22 October 1997.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Pakistan, Palestinian Authority, Syrian Arab Republic.

WHO European Region: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkey, Turkmenistan, Uzbekistan; outside MECACAR: Albania, Bosnia and Herzegovina, Bulgaria, Greece, Italy, Republic of Moldova, the former Yugoslav Republic of Macedonia, Ukraine, the Federal Republic of Yugoslavia.

Partner organizations: BASICS, CDC, IMC, Rotary International PolioPlus, UNICEF, USAID, WHO.

Context of the fourth meeting

In the European Region, there was promise of interruption of wild poliovirus circulation when no case had yet been reported for 1997 at the time of the meeting – later found to be an unmet promise. Concerns remained about continuing silent indigenous transmission in areas of the countries affected by the epidemic in 1996. Improvements in surveillance in both regions were made, but were limited. Mopping-up activities had been undertaken or planned in the countries and areas of both regions at highest risk of ongoing or cross-border transmission of wild poliovirus.

Main findings

National immunization days:

- in 1995, in MECACAR countries and areas, 55 million children received two doses of OPV, with coverage of 95% of target being achieved; in 1996, 60 million children received two doses, with coverage still at 95% of target; and
- in 1997, in the Eastern Mediterranean Region, 44 million children received OPV (including the first NIDs in Afghanistan) with coverage generally over 95%. In the European Region, 17 million children were immunized, resulting in 95% coverage.

Incidence of poliomyelitis:

- in MECACAR countries and areas of the Eastern Mediterranean Region, 377 polio cases were reported in 1996, a 42% reduction from 1995; and
- in 1996, 192 cases of polio were reported from European countries, 23 in MECACAR countries, affecting 45 geopolitical divisions.

Surveillance for cases of acute flaccid paralysis:

- in the Eastern Mediterranean Region, reported non-polio AFP detection rates were over 1.0 in five MECACAR countries and areas in 1997 and with adequate samples from over 50% of cases in all countries and areas except Afghanistan and Pakistan;

- the overall reported rate of non-polio AFP per 100 000 children in European countries in 1996 had reached 0.7 and this had increased to 1.1 in 1997, with 79% of cases having adequate specimens.

Key recommendations

- countries and areas participating in Operation MECACAR generally to continue NIDs as Operation MECACAR Plus, and continue in subsequent years unless the risk of cross-border transmission is low, routine coverage is consistently over 90%, and AFP surveillance is sensitive, reaching a non-polio AFP rate over 1 per 100 000 and $\geq 80\%$ of cases have timely specimens;
- other countries and areas, where wild virus has recently been isolated and routine coverage is below 90%, additionally to conduct sub-NIDs in areas bordering polio-endemic countries, among high-risk populations;
- weekly reporting of line-listed data of all AFP cases to be introduced; and
- active surveillance to be established in countries and areas not yet reaching acceptable passive AFP surveillance.

FIFTH COORDINATION MEETING OF OPERATION MECACAR PLUS

Cairo, Egypt, 20–22 October 1998.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Jordan, Lebanon, Pakistan, Palestinian Authority, Syrian Arab Republic.

WHO European Region: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkey, Turkmenistan, Uzbekistan; outside MECACAR: Albania, Ukraine, Federal Republic of Yugoslavia.

Partner organizations: CDC, Rotary International PolioPlus, UNICEF, USAID, WHO.

Context of the fifth meeting

Great progress had been made in many countries and areas in limiting poliovirus transmission and improving AFP surveillance. Yet continued transmission in Turkey, despite mopping-up activities in 1997 and NIDs in 1998, indicated problems in the quality of the effort. Genetic analysis of recent poliovirus isolates indicated that supplementary immunization efforts had limited genetic diversity and supported continued coordinated activities in both regions. Improvements in AFP surveillance were not sufficient in the previous year to indicate the extent of areas without poliovirus transmission in both regions.

Vaccine administration during NIDs, Iran 1995



One of the outreach teams for NIDs, Afghanistan 2000



Willing participation in NIDs, Iraq 1995



Main findings

National immunization days:

- in 1997–1998, all countries and areas of the Eastern Mediterranean Region except for Cyprus conducted two rounds of NIDs, including Afghanistan. To maximize their impact, NIDs were coordinated and synchronized among several groups of neighbouring countries and areas. Routine immunization coverage improved to 82%; and
- the European Region continued to report overall OPV3 coverage above 90%. NIDs and sub-NIDs were implemented in the spring of 1998, achieving coverage of 95%.

Incidence of poliomyelitis:

- in MECACAR countries and areas of the Eastern Mediterranean Region, 1213 polio cases were reported in 1997 and 441 in 1998; and
- an historic low of 7 cases of poliomyelitis was reported for the European Region in 1997, while the ultimate number of polio cases in 1998 was 26, reported exclusively from Turkey (24 type 1, 2 type 3 of the same genetic pool as previous type 1 and type 3 isolates in Turkey and surrounding countries).

Surveillance for cases of acute flaccid paralysis:

- in the Eastern Mediterranean Region, non-polio AFP detection rates were over 1.0 in six of eight MECACAR countries and areas and with adequate samples from at least 50% of cases in all countries and areas, including Afghanistan; and
- in 1997, rate of reported non-polio AFP per 100 000 children in European countries had reached 1.12, with 69% of cases having adequate specimens.

Key recommendations

- all MECACAR countries and areas in the Eastern Mediterranean Region strongly recommended to conduct high-quality NIDs in 1999;
- European countries participating in Operation MECACAR to continue NIDs in 1999 unless the risk of cross-border importation is low, routine coverage is over 90%, AFP surveillance is sensitive, reaching an AFP rate over 1 per 100 000 and $\geq 80\%$ timely specimen collection, and wild virus transmission has not been detected for several years;
- mopping-up activities should continue in 1999 in high-risk areas, that is, where wild virus has recently been isolated, routine coverage is below 90%, in areas bordering polio-endemic countries, and among high-risk populations. Coordination of cross-border activities should continue;
- weekly reporting of line-listed data of all AFP cases to be continued;
- active surveillance should be implemented at all health facilities likely to see cases of AFP, and overall AFP surveillance and the national laboratories to be further strengthened; and
- Operation MECACAR Plus should continue at least through the year 2000.

SIXTH COORDINATION MEETING OF OPERATION MECACAR PLUS

Ankara, Turkey, 20–22 October 1999.

Participants

WHO Eastern Mediterranean Region: Afghanistan, Islamic Republic of Iran, Jordan, Lebanon, Palestinian Authority, Syrian Arab Republic.

WHO European Region: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkey, Turkmenistan, Uzbekistan; outside MECACAR: Ukraine, Federal Republic of Yugoslavia.

Partner organizations: CDC, Japan International Cooperation Agency, Rotary International PolioPlus, USAID, UNICEF and WHO.

Context of the sixth meeting

In the European Region, the last detected case of poliomyelitis associated with a wild poliovirus had occurred over 10 months previously on 26 November 1998 in southeastern Turkey. Subsequent surveillance for AFP cases yielding a non-polio AFP rate close to 1 per 100 000 children had not detected any further cases caused by wild poliovirus. Significant numbers of polio cases had continued to be reported from Afghanistan and Pakistan. An extensive epidemic of type 1 polio, 50 cases till 20 October 1999, had occurred in Iraq of the same genetic lineage as the prior cases in Iraq and surrounding countries. Notably, AFP surveillance was now well established in all countries and areas.

Main findings

National immunization days:

- after a gap of two years, supplementary immunization rounds were conducted in the northern areas of Afghanistan; and
- NIDs were conducted in seven countries of the European Region where indicated by persisting poliovirus transmission or proximity to infected countries.

Incidence of poliomyelitis:

- no poliomyelitis caused by wild poliovirus had been detected in the European Region in 1999; and
- in the Eastern Mediterranean Region, 355 cases were reported to 20 October, with Pakistan reporting 234; Afghanistan, 55; Iraq, 50; and the Islamic Republic of Iran, 3 (2 being direct importations [occurring in a person exposed outside the country], and the third a first generation case from another importation from Afghanistan).

Surveillance for cases of acute flaccid paralysis:

- in the Eastern Mediterranean Region, the overall non-polio AFP rate reached 1 per 100 000 in 1999;
- problems in specimen handling, storage and shipment apparently prevented accurate virologic confirmation in prior months in Iraq;
- in recently endemic counties in the European Region the overall non-polio AFP rate was 1.51 per 100 000 children in 1997, 1.13 in 1998 and 0.8 to the end of October 1999. Satisfactory specimen collection from cases reached 85% in 1999.

Key recommendations

- the coordination of activities under Operation MECACAR Plus should continue. Two cross-border coordination meetings to be held in 2000 and a full Operation MECACAR Plus meeting in 2001;
- regional communication and advocacy plans to be developed by UNICEF and WHO;
- polio-endemic and recently endemic countries and areas to finalize acceleration plans;
- supplementary immunization to be continued in all countries and areas currently reporting endemic polio, plus Turkey and countries bordering Afghanistan;
- AFP surveillance to be intensified in both Regions, including emphasis on active surveillance and on “silent” areas; and
- all poliovirus isolates to be submitted for intratypic differentiation and, where appropriate, for genomic sequencing to identify patterns of persisting transmission;
- regional plans for the containment of poliovirus stocks to be prepared as soon as possible.

No coordination meeting was held in the year 2000.

Recording and monitoring routine immunization in a district in Kurgan Tyube, Tajikistan 2000



ROUTINE NATIONAL IMMUNIZATION SERVICES

NIDs were always seen as supplementary to guaranteeing highly effective routine immunization services, ideally delivering all scheduled vaccines at appropriate recipient ages. It was never intended that providing OPV through campaigns should be the only immunization provided against poliomyelitis, although it was accepted that campaigns would probably reach children and communities under-served by routine services.

In the first three years of Operation MECACAR, and in subsequent years,

routine immunization coverage was markedly increased in most countries and areas (Table 1, Fig. 2). While this increase occurred at a time when countries of the former Soviet Union were consolidating and strengthening their immunization programmes, it is clear that the introduction of coordinated NIDs did not have a detrimental effect on the achievements of routine services and, in most areas, appeared to have been beneficial.

Eastern Mediterranean Region	1993	1994	1995	1996	1997	1998	1999
Afghanistan	NA	NA	NA	31	45	34	32
Islamic Rep. of Iran	99	96	98	97	100	100	100
Iraq	88	87	91	95	92	86	89
Jordan	94	96	99	100	98	91	85
Lebanon	87	92	94	94	92	96	94
Pakistan	74	65	57	77	74	79	80
Syrian Arab Rep.	90	89	92	96	95	97	97
Palestinean Self-Rule Areas	94	94	96	96	96	98	89

European Region	1993	1994	1995	1996	1997	1998	1999
Armenia	92	92	93	98	95	96	97
Azerbaijan	94	95	98	97	98	98	99
Bulgaria	97	94	97	95	96	96	96
Georgia	81	82	81	93	98	95	98
Kazakhstan	69	75	94	98	100	100	100
Kyrgyzstan	69	83	96	94	99	97	99
Russian Fed.	82	88	92	97	91	94	97
Tajikistan	77	92	81	89	92	94	96
Turkey	76	81	67 ¹	83	79	81	79
Turkmenistan	87	87	94	88	99	99	98
Uzbekistan	46	75	99	97	98	99	99

Table 1. Reported routine immunization coverage by administrative monitoring: Percentage of children with 3 doses of OPV given in the first year of life, in countries and areas of Operation MECACAR 1993–1999

¹ Fall in OPV3 coverage in Turkey in 1995 due to shortages in supply of DTP and subsequent disruption in routine services.

Figure 2.

Reported routine immunization coverage by administrative monitoring: Percentage of children with three doses of OPV given in the first year of life in countries and areas of Operation MECACAR, 1993 and 1999

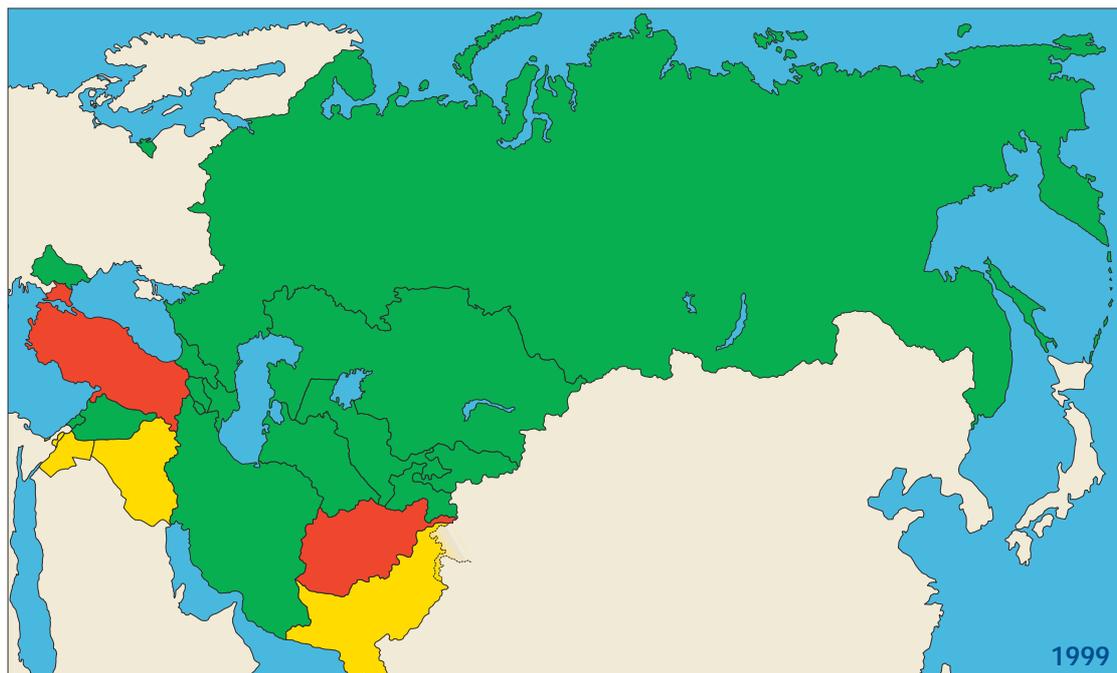
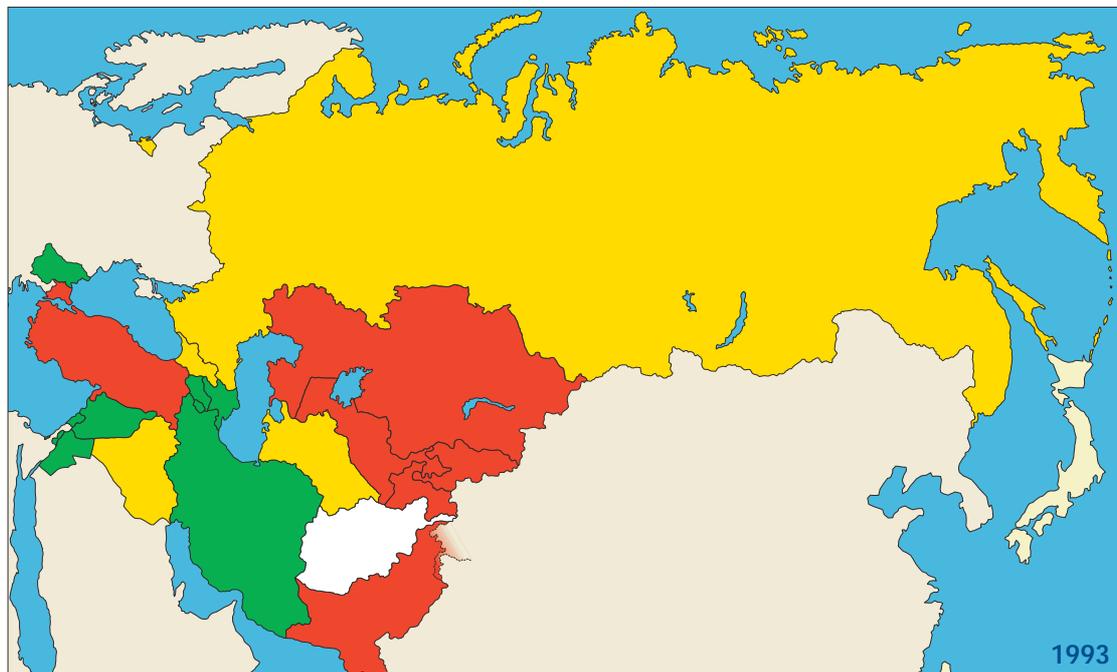
Coverage

■ <80%

■ 80-89%

■ ≥90%

□ No report



MECACAR SUPPLEMENTARY IMMUNIZATION ACTIVITIES

PLANNING FOR NATIONAL IMMUNIZATION DAYS

Through the coordination of Operation MECACAR and Operation MECACAR Plus, synchronized NIDs were conducted in all MECACAR countries and areas in 1995, 1996 and 1997, and NIDs or sub-NIDs in selected countries and areas during 1998–2000.

Eighteen participating countries and areas conducted the NIDs in March–May 1995. Planning to ensure success was based on principles developed during the first coordination meeting in Ankara, in January 1995. These principles included:

- ensuring high-level commitment and consensus;
- guaranteeing adequate resources;
- meticulous planning well in advance of the NIDs themselves;
- involving the private sector, NGOs, religious and other leaders;
- accurate estimating of the target population;
- establishing a cascade effect, with structures and responsibilities defined at each level;
- developing a standard schedule;
- ensuring good logistical support;
- utilizing effective social mobilization techniques;
- making specific arrangements for “special” populations;
- exercising supervision at each level;
- ensuring efficiency and good services at immunization points; and
- planning for evaluation of the activity.

These principles were applied in the planning of NIDs in each successive year. Results suggest that they were effective in guaranteeing the success of national NIDs and of Operation MECACAR itself.

PARTICIPANTS IN OPERATION MECACAR/MECACAR PLUS

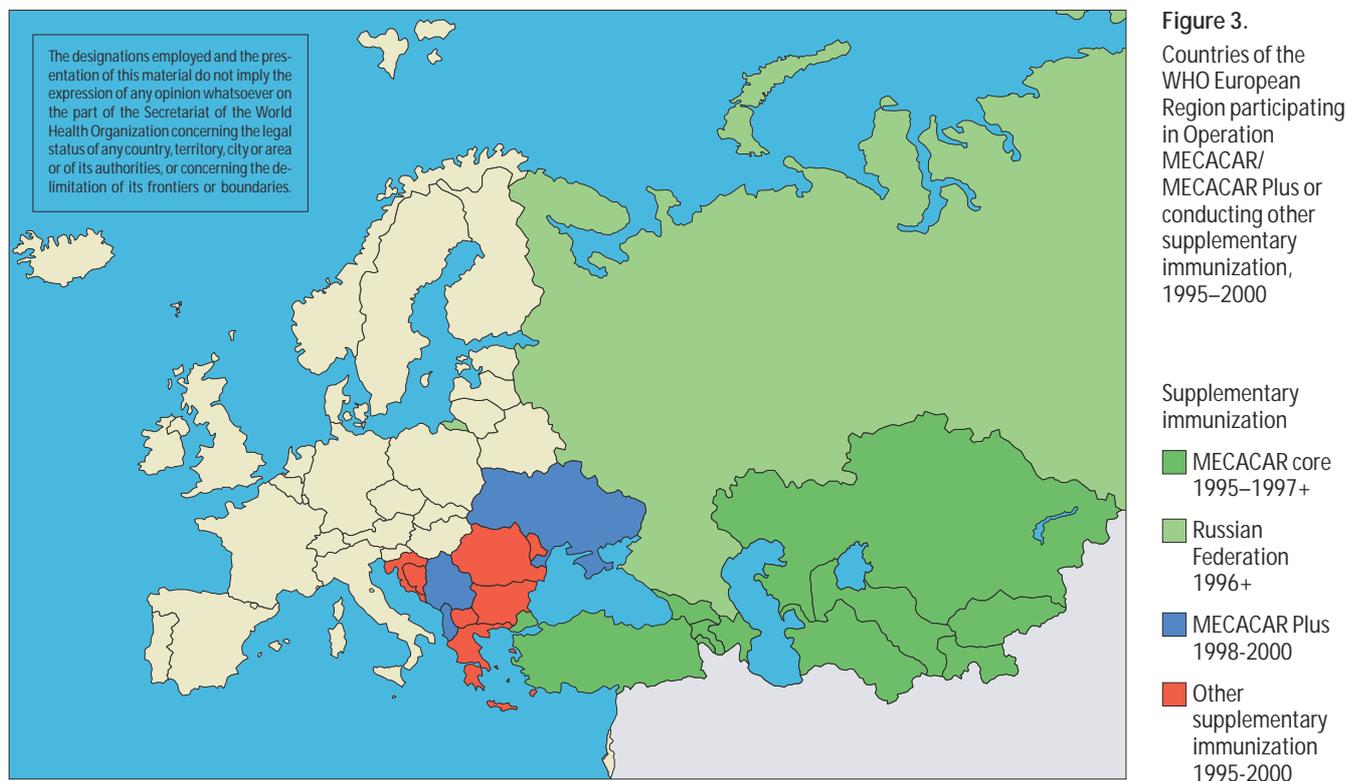
During 1995–2000, repeated annual NIDs or sub-NIDs were conducted in the following countries and areas:

Eastern Mediterranean Region		European Region	
Afghanistan	Pakistan	Armenia	Russian Federation
Islamic Republic of Iran	Syrian Arab Republic	Azerbaijan	Tajikistan
Iraq	Palestinian Self-Rule Areas	Georgia	Turkey
Jordan		Kazakhstan	Turkmenistan
Lebanon		Kyrgyzstan	Uzbekistan

Elsewhere in the Eastern Mediterranean Region, NIDs were being conducted in Bahrain, Egypt, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Tunisia and the United Arab Emirates. These campaigns were not, however, specifically coordinated with Operation MECACAR timing.

In the European Region, Bulgarian authorities had intended during planning to participate only in the 1995 rounds of MECACAR NIDs, primarily to help protect its minority populations. In 1996, the Russian Federation joined Operation MECACAR. All the other countries listed continued synchronized NIDs in 1996, 1997, and 1998 (sub-NIDs in Kazakhstan and Kyrgyzstan). More limited activities were conducted in the subsequent years, except in Tajikistan, Turkey, Turkmenistan, and Uzbekistan.

Additional supplementary immunization activities were conducted in countries of the European Region during the years of Operation MECACAR (Figure 3). In 1996, Albania, the Republic of Moldova and the Ukraine, conducted NIDs of children under 5 years of age, while Romania conducted phased sub-NIDs. The supplementary immunization rounds in Moldova, Romania and Ukraine were coordinated in timing. Albania, later in the year, conducted an outbreak response mass immunization with both rounds targeted to persons up to 50 years of age (and reaching over 85% of the target). In addition, because of the 1996 outbreak in Albania (138 cases), Greece (5 cases) and the Federal Republic of Yugoslavia (24 cases), Bosnia and Herzegovina, Croatia (eastern Slavonia) and the former Yugoslav Republic of Macedonia conducted rounds of NIDs in 1996–1997, Greece and Italy conducted outreach immunization in the Roma populations and Yugoslavia conducted sub-NIDs in a large target age group of school-aged children. In 1997, Albania and Yugoslavia also repeated NIDs/sub-NIDs. Further NIDs were conducted in Albania and Ukraine in 1998, as were sub-NIDs in Yugoslavia. Representatives of these three countries



participated in the coordination meetings in 1997–1999 as part of Operation MECACAR Plus. Greece incompletely implemented NIDs in 1998. Sub-NIDs continued in the former Yugoslav Republic of Macedonia in 1999 and in Bosnia and Herzegovina in 1999 and 2000.

SYNCHRONIZATION AND SEASONAL CALENDAR OF SUPPLEMENTARY IMMUNIZATION

Although NIDs were conducted in a synchronized manner during the low season of poliovirus transmission, they did not take place on exactly the same dates in all countries and areas. In the Eastern Mediterranean Region, Pakistan later coordinated its NIDs with those being conducted in India, while the Syrian Arab Republic and Lebanon conducted their NIDs in February and March 1997. Both rounds in all countries of the European Region, however, took place within the three months of March, April or May. Additionally, synchronized autumn supplementary immunization campaigns were implemented in many countries and areas in 1997–2000. The seasonal calendar and extent of supplementary immunization activities for 1995–2000 is indicated for all MECACAR countries and areas in Table 2.

Table 2.
Timing of
Supplementary
Immunization
Activities in
MECACAR
countries and
areas, 1995-2000

		Eastern Mediterranean Region								European Region									
		Afghanistan	Islamic Rep. of Iran	Iraq	Jordan	Lebanon	Pakistan	Syrian Arab Republic	Palestinian Self-Rule Areas	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Russian Federation	Tajikistan	Turkey	Turkmenistan	Uzbekistan
1995	Jan																		
	Feb																		
	Mar			N1	N1	N1		N1											
	Apr	N1	N1	N2	N2	N2	N1	N2	N1	N1	N2	N1	N1	N1		N1	N1	N1	N1
	May		N2					N2		N2						N2	N2	N2	N2
	Jun	N2																	
	Jul																		
	Aug																		
	Sep																		
	Oct																		
	Nov																		
	Dec								N1										
1996	Jan							N2											
	Feb																		
	Mar			N1		N1		N1		N1		N1		N1					
	Apr			N2		N2		N2	N1	N1	N2	N1	N2	N1	N2	N1	N1	N1	N1
	May		N1		N1				N2	N2						N2	N2	N2	N2
	Jun	N1	N2		N2														
	Jul	N2																	
	Aug																		
	Sep																		
	Oct																		
	Nov																		
	Dec								N1		SN1							SN1	SN1
1997	Jan							N2		SN2									
	Feb								N1										
	Mar			SN1	N1	N2		N2			N1				N1				
	Apr	N1	N1	SN2	N2					N1	N2	N1	N1	N1	N2	N1	N1	N1	N1
	May	N2	N2							N2				N2	N2		N2	N2	N2
	Jun																		
	Jul																		
	Aug																		
	Sep																		
	Oct		M1										SN1	SN1			M1		SN1
	Nov		M2	SN1							SN1	SN1				SN1	M2	SN1	SN2
	Dec		M1	SN2					N1		SN2	SN2				SN2		SN2	

		Eastern Mediterranean Region								European Region									
		Afghanistan	Islamic Rep. of Iran	Iraq	Jordan	Lebanon	Pakistan	Syrian Arab Republic	Palestinian Self-Rule Areas	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Russian Federation	Tajikistan	Turkey	Turkmenistan	Uzbekistan
1998	Jan																		
	Feb	SN1	M2				N2												
	Mar	SN2	N1	N1	N1	N1		N1	N1		N1		SN1		N1	N1			
	Apr		N2	N2	N2	N2	SN1	N2		N1	N2	N1	SN2	SN1	N2	N2	N1	N1	N1
	May	N1					SN2		N2	N2		N2		SN2			N2	N2	N2
	Jun	N2	M1																
	Jul																		
	Aug																		
	Sep																		
	Oct		M1	SN1					N1	SN1	SN1					SN1	M1	SN1	SN1
	Nov		M2	SN2					N2	SN2	SN2					SN2	M2	SN2	SN2
	Dec	SN1	M1					N1											
1999	Jan	SN2	SN1				N2												
	Feb		SN2																
	Mar			N1	N1	N1				N1		SN1			N1				
	Apr		M1	N2	N2	N2	SN1		N1	N2	SN1	SN2		N1	N2	N1	N1	N1	
	May	N1	M2				SN2		N2		SN2			N2		N2	N2	N2	
	Jun	N2																	
	Jul																		
	Aug	M1																	
	Sep	M2																	
	Oct	N1	M1	SN1				N1	N1	SN1				SN1	SN1	SN1	M1	SN1	SN1
	Nov	N2	M2	SN2				N2/CB1	N2	SN2	SN1			SN2	SN2	SN2	M2	SN2	SN2
	Dec							CB2			SN2								
2000	Jan																		
	Feb																		
	Mar			N1	N1	N1	PN	N1	M1		N1			SN1		N1			
	Apr		M1	N2	N2	N2	PN/CB1	N2	M2	SN1	N2			SN2	SN1		N1	N1	N1
	May	N1						PN/CB1		SN2					SN2	N2	N2	N2	N2
	Jun	N2	M2	SN1				PN/CB2											
	Jul							CB2											
	Aug	SN1		SN2															
	Sep	SN2																	
	Oct	N1	SN1					N1	M1		SN1	M1				SN1	M1	SN1	SN1
	Nov	N2	SN2	N1				N2	M2		SN2	M2				SN2	M2	SN2	SN2
	Dec			N2															

N1: National Immunization Days 1st round

N2: National Immunization Days 2nd round

SN1: Sub-National Immunization Days 1st round

SN2: Sub-National Immunization Days 2nd round

M1: Mopping-up 1st round

M2: Mopping-up 2nd round

CB: Cross-Border; other limited cross-border immunization corresponding to activities in neighbouring countries and areas

CB1: Cross Border 1st round

CB2: Cross Border 2nd round

PN: Phased National Immunization Days, phased throughout Pakistan in two rounds due to delays and shortages in vaccine supply

Rounds for Sub-NID and mopping-up activities may be carried out in different areas; rounds numbered in this table correspond to each respective area

NIDs in 1995 and 1996 in Afghanistan were multiantigen campaigns which could not include the entire country

See text for explanations

CHILDREN IMMUNIZED DURING NIDS AND SUB-NIDS

In 1995, during the first NID rounds of Operation MECACAR, 55 million children aged less than 5 years received two doses of OPV, the coverage achieved being >95% of targeted children.

During the NIDs in the spring of 1996 and 1997 all countries and areas repeated this high achievement and 60 million or more children received at least two supplementary doses each year. During the years of Operation MECACAR and MECACAR Plus, in addition to some MECACAR countries of the European Region modifying the range of participation in the spring campaigns, the target age group changed for most countries and areas. The numbers of children in the target groups for spring and autumn NIDs and sub-NIDs for 1995–2000 and the reported achievements are detailed in Table 3, with the age of the target group varying by country and by year.

CROSS-BORDER ACTIVITIES AND “MOPPING-UP”

Supplementary immunization activities coordinated between countries focusing on bordering areas is termed cross-border immunization. Not only were the spring NIDs important in reaching susceptible children and limiting the geographic extent of transmission of wild poliovirus, but as a result of the limited circulation of wild poliovirus, more intense, focal activities could be undertaken to interrupt transmission. This intense focus on certain areas with house-to-house visits by immunizing teams to vaccinate every child is termed “mopping-up”. Starting in 1997, mopping-up activities were planned in several border areas and many were preceded by cross-border coordination meetings. NIDs and sub-NIDs often included intense mopping-up activities in high-risk areas and populations, generally using mobile teams going house-to-house to vaccinate. Countries and areas monitored the frequency of children receiving the first dose of OPV during the mopping-up campaigns (‘zero-dose children’). Because of the uncertainty of specific population sizes, the percentage of doses given to ‘zero-dose children’, if low, was found to be a more reliable indicator of success than the results of estimated coverage; many countries and areas also monitored coverage through non-statistically valid surveys of parents in the highest risk areas immediately after the campaigns.

CROSS-BORDER COORDINATION MEETINGS FOR SELECTED COUNTRIES

Although some coordination meetings on polio eradication surveillance activities had been held in September 1994 and March 1996 involving participants of Turkey with six MECACAR countries of the Eastern Mediterranean Region, the regional directors of both the Eastern Mediterranean and European regions determined in a special informal consultation in January 1997 that further progress in Operation MECACAR would require specific mopping-up campaigns. In late 1997, it became apparent that additional coordination of these activities through specific meetings for the key countries would be optimal and allow improved coordination and the sharing of achievements. In view of the critical role that the MECACAR cross-border coordination meetings

		1995		1996		1997		1998		1999		2000			
		Target population	Coverage %	Target population	Coverage %	Target population	Coverage %	Target population	Coverage %	Target population	Coverage %	Target population	Coverage %		
Eastern Mediterranean Region	NIDs	Afghanistan	2732	90	3076	88	4190	89	4189	76	4346	92	4985	104	
		Islamic Rep. Iran	7373	101	7690	99	7254	102	6815	104					
		Iraq ³	4157	93	3866	95	3228	96	3748	96	3925	96	3835	102	
		Jordan	678	102	659	105	682	106	705	94	729	92	753	93	
		Lebanon	375	94	370	97	375	88	375	94	375	97	375	97	
		Pakistan	21445	98	22438	104	23993	102	24708	103	24965	105	27372	97	
		Syrian Arab Republic	2852	102	2944	101	3032	101	3087 ⁴	101			3165	101	
		Palestinian Self-Rule Areas	460	102	456	106	480	107	472	97	520	90			
		<i>Regional subtotal</i>	<i>40072</i>		<i>41499</i>		<i>43234</i>		<i>44099</i>		<i>34860</i>		<i>40485</i>		
		SubNIDs	Afghanistan							192	97	147	135		
Islamic Rep. Iran						210	95	865	102	2304	100	631			
Iraq						549	64	1728	98	528	99	2617			
Pakistan								1896	108	11159	111				
Palestinian Self-Rule Areas												41	95		
<i>Regional subtotal</i>						<i>759</i>		<i>4681</i>		<i>15585</i>		<i>3289</i>			
Regional Totals		40072		41499		43993		48780		50445		43774			
European Region	NIDs	Armenia	361	97	307	94	191	95	177	98	162	98			
		Azerbaijan	839	98	656	98	575	98	544	99	509	98			
		Georgia	385	96	333	93	294	94	157	95					
		Kazakhstan	1280	99	1118	99	1019	99							
		Kyrgyzstan	560	99	443	99	432	98							
		Russian Federation			3756	99	3742	99	3630	99	3490	99			
		Tajikistan	918	99	893	97	870	97	701	97	688	99	686	99	
		Turkey	6800	94	6790	95	6767	96	6780	94	6648	93	6648	93	
		Turkmenistan	620	99	468	99	499	99	465	99	407	99	390	100	
		Uzbekistan	3091	97	2443	98	2454	99	2368	99	2351	100	2146	99	
		<i>Regional subtotals</i>	<i>14854</i>		<i>17207</i>		<i>16843</i>		<i>14822</i>		<i>14255</i>		<i>9870</i>		
		SubNIDs	Armenia			62	94	72	59	104	95	108	98	106	98
			Azerbaijan			52	98	24	97	90	99	91	99	91	99
			Georgia									19	95	2	90
Kazakhstan						110	98	427	98	409	98				
Kyrgyzstan						256	97	166	98	156	99	39	99		
Russian Federation										1340	99	1005	100		
Tajikistan						306	99	366	99	367	98	365	99		
Turkey						2039	84	1107	84	1917	85	1647	82		
Turkmenistan				150	98	118	99	120	100	137	100	134	100		
Uzbekistan				1138	99	1141	99	1121	100	309	99	442	100		
<i>Regional subtotals</i>			<i>1402</i>		<i>4066</i>		<i>3501</i>		<i>4853</i>		<i>3837</i>				
Regional Totals		14854		18609		20909		18323		19108		13701			

Table 3.

Target population (in thousands)¹ and coverage² achieved during supplementary immunization activities conducted as part of Operation MECACAR during 1995-2000

¹ The target age in 1995 was <5 years (or older) in all participating countries and areas and in subsequent years remained <5 years of age for MECACAR countries and areas of Eastern Mediterranean Region and for Turkey; in other MECACAR countries of European Region, the target age for 1996-1998 was <4 years of age (in the Russian Federation, the target age was <3 years of age except in the northern Caucasus territories).

² Percentage of targeted child population vaccinated, average of the two rounds conducted; coverage over 100% indicates either problems with identifying the size of the target populations and/or includes immunizations given to older children

³ Northern Governorates of Iraq achieved 81 and 78% in the two rounds in 1997 and 83% in the first round in 1998; subsequently these areas' results are included in the country result

⁴ Syria conducted NIDs targeting 6 700 000 children 2 months to 14 years of age in Oct-Nov 1998

played in the detailed planning of each activity, each is summarized in the order in which they took place. In addition to these meetings, additional meetings of WHO staff with central Asian republic immunization programme managers took place to assist in easier access to vaccine supply for supplementary immunization activities of northern Afghanistan in the autumn of 1998 and in 2000.

First coordination meeting on prevention of cross-border transmission of wild poliovirus between Islamic Republic of Iran, Iraq, Syrian Arab Republic and Turkey

Alexandria, Egypt, 3–4 May 1998.

Participants

WHO Eastern Mediterranean Region: Islamic Republic of Iran, Iraq, Syrian Arab Republic.

WHO European Region: Turkey.

Partner organizations: CDC, UNICEF, WHO.

Context of the first meeting

With spring NIDs conducted in all countries and areas through Operation MECACAR since 1995, and autumn sub-NIDs/mopping-up conducted in southeastern Turkey and border areas of the Islamic Republic of Iran, Iraq, and the Syrian Arab Republic in 1997, there remained evidence of substantial continuing transmission of wild poliovirus in the area.

Main findings

- border areas involving the participating countries had historically constituted a single shared reservoir for wild polioviruses
- despite the spring NIDs since 1995 and autumn mopping-up in 1997, there continued to be a large number of clinical cases of polio in Iraq and virologically confirmed cases in Turkey.

Key recommendations

- mopping-up immunization planned for high-risk and border areas of all countries for October and November 1998 should be of high quality, with increased planning and supervision;
- all participants will conduct high-quality NIDs in the spring of 1999;
- AFP surveillance activities should be heightened in the border areas of all countries;
- direct channels of communication were encouraged; and
- progress and coordination of future actions should be reviewed at a subsequent coordination meeting.



Mobile team vaccination in rural areas during NIDs, Turkey 1999



Religious leader participation in NIDs, Iran 1995

Second coordination meeting on prevention of cross-border transmission of wild poliovirus between Islamic Republic of Iran, Iraq, Syrian Arab Republic and Turkey

Damascus, Syrian Arab Republic, 26–27 August 1998.

Participants

WHO Eastern Mediterranean Region: Islamic Republic of Iran, Iraq, Syrian Arab Republic.

WHO European Region: Turkey.

Partner organizations: CDC, UNICEF, WHO.

Context of the second meeting

Because of concern that supplementary immunization activities to date were not sufficiently efficient in interrupting ongoing endemic transmission of wild poliovirus in the shared reservoir of the border areas and populations, enhanced coordinated activities were planned in the high-risk areas during the autumn of 1998, with additional detailed planning of logistics (microplanning) to be discussed at this meeting.

Main findings

- ongoing transmission of wild poliovirus in unimmunized children in the area of northern Iraq and southeastern and eastern Turkey also put the adjacent countries at risk, as well as more distant countries and areas of both regions.

Key recommendations

- coordinated mopping-up immunization was planned for high-risk and border areas of all countries for the same weeks during October and November 1998;
- success will require attention to four elements: microplanning at district level, predominant use of house-to-house immunization, use of OPV only (not other antigens), and adequate logistical support;
- countries should engage in more intensive supervision of activities than in previous supplementary immunization activities, with monitoring and evaluation, including external monitoring; and
- AFP surveillance should improve in border areas, with particular attention to silent areas.

Third coordination meeting on prevention of cross-border transmission of wild poliovirus between Islamic Republic of Iran, Iraq, Syrian Arab Republic and Turkey

Istanbul, Turkey, 1–2 February 1999.

Participants

WHO Eastern Mediterranean Region: Islamic Republic of Iran, Syrian Arab Republic.

WHO European Region: Turkey.

Partner organizations: WHO.

Context of the third meeting

As with the previous coordination meetings on preventing cross-border transmission, planning for coordinated and well-supervised mopping-up activities in high-risk areas of southeastern and eastern Turkey, as well as the northern areas of the other countries, were to be reviewed and discussed.

Main findings

- genetic analysis of wild poliovirus isolates confirmed a decrease in the diversity of circulating Type 1 strains in the border populations; and
- further improvements in the quality of supplementary immunization were needed to interrupt transmission completely in the border populations.

Key recommendations

- NIDs must continue in the spring in each referent country;
- the high-risk border populations require house-to-house immunization with mobile teams to reach unimmunized children, with microplanning, logistic support, supervision, monitoring and evaluation;
- AFP surveillance should be improved in all areas, with active surveillance in the critical border populations;
- standard criteria should be used for classification of AFP cases, with all countries and areas aiming to apply the virological classification scheme by 2000; and
- additional immunization and surveillance activities will require additional support of the international partners.

Coordination meeting on prevention of cross-border transmission of wild poliovirus

Baku, Azerbaijan, 23–24 August 1999.

Participants

WHO Eastern Mediterranean Region: Afghanistan.

WHO European Region: Armenia, Azerbaijan, Georgia, Russian Federation, Tajikistan, Turkmenistan, Turkey, Uzbekistan.

Partner organizations: Médecins sans Frontières, Rotary International Baku, UNICEF, WHO.

Context of this meeting

This meeting focused on planning activities for the Caucasus area as well as the central Asian republics. Afghanistan had recently experienced an outbreak with a large number of confirmed Type 1 and Type 3 poliovirus positive cases in Kunduz district (bordering Uzbekistan and Tajikistan) where sentinel surveillance had recently expanded.

Main findings

- previous inappropriate handling of specimens in Iraq had apparently prevented virological confirmation since mid-1997, but continuing clinical cases and the recent confirmation of eight Type 1 poliovirus isolations indicated continuing transmission in the shared border population with Turkey;
- extension of AFP surveillance to other areas of Afghanistan might reveal other chains of transmission; and
- risk of importation and cross-border transmission remains in many Caucasus countries and in high-risk territories of the Russian Federation in the north Caucasus.

Key recommendations

- coordinated spring NIDs should continue in Afghanistan, Tajikistan, Turkmenistan and Uzbekistan, with four rounds planned per year in Afghanistan;
- continued intensive supplementary immunization activities must continue for at least three years after the last case in the areas of western Islamic Republic of Iran, northern Iraq, the Syrian Arab Republic and southeastern and eastern Turkey;
- in participating countries, repeated supplementary immunization will be necessary even without reported polio cases until AFP surveillance meets all performance standards throughout the population; and
- the high-risk border populations require house-to-house immunization with mobile teams to reach nonimmunized children, with microplanning, logistic support, supervision and monitoring and evaluation.

Fourth coordination meeting on prevention of cross-border transmission of wild poliovirus between Islamic Republic of Iran, Iraq, Syrian Arab Republic and Turkey
Cairo, Egypt, 2–3 February 2000.

Participants

WHO Eastern Mediterranean Region: Islamic Republic of Iran, Iraq, Syrian Arab Republic; outside MECACAR: Egypt.

WHO European Region: Turkey.

Partner organizations: Rotary International Cairo, UNICEF, WHO.



Detailed planning
for mopping-up in
Diyarbakir, Turkey
1998



Preparing the cold
boxes for delivery
of vaccine using
local resources,
Afghanistan 1995

Context of the fourth meeting

The outbreak in Iraq ultimately led to 88 cases (67 virologically confirmed) in 1999. The problems in transportation of specimens (which may have prevented confirmation of ongoing circulation in 1998) and further improvements in AFP surveillance had been addressed. With intensive NIDs conducted in Iraq to counteract declining routine immunization and control the outbreak, additional planning and coordination were needed for spring and autumn of 2000 to ensure the interruption of wild poliovirus in the area.

Main findings

- Assessment of the NIDs in Iraq in high-risk and other areas indicated suboptimal coverage despite high reported coverage; and
- surveillance performance indicators had reached expected standards in all participating countries, with indications that sub-national performance was also improving.

Key recommendations

- in order to ensure reaching previously unvaccinated children with supplementary immunization in high-risk areas, house-to-house approaches are necessary. The Ministry of Health of Iraq agreed to conduct its next NIDs using house-to-house approaches throughout the country;
- special attention should be given to high-risk, hard-to-reach and cross-border populations, and every effort should be made to provide ongoing routine and supplementary immunization;
- high-quality intensive supplementary immunization activities should be ensured through advanced preparation, detailed microplanning addressing local challenges, performance of house-to-house immunization, extensive supervision and monitoring of “zero-dose” children. Coordination in timing and activity in cross-border areas are critical;
- weekly active surveillance must be rigorously implemented;
- suspicion should be heightened wherever AFP is discovered in any child with incomplete immunization status, clinical poliomyelitis or exposure outside the area; and
- all countries need to prepare plans for prevention, early detection and control of importation of wild poliovirus.

Coordination meeting on prevention of cross-border transmission of wild poliovirus

Ashgabat, Turkmenistan, 26–27 July 2000.

Participants

WHO Eastern Mediterranean Region: Afghanistan.

WHO European Region: Tajikistan, Turkmenistan, Uzbekistan.

Partner organizations: UNICEF, WHO.

Context of this meeting

Ongoing transmission of poliovirus in Afghanistan required continued vigilance for possible importation across borders, and coordination of supplementary immunization.

Main findings

- although its borders with central Asian republics of the European Region are generally closed, the poliomyelitis situation in Afghanistan remained highly important for polio eradication activities in the European Region;
- AFP surveillance had improved in all countries, including the expansion of surveillance catchment areas in Afghanistan, although sub-national indicators in some participating countries were suboptimal; and
- the number of reported cases in Afghanistan had fallen, despite improved surveillance, due to more effective supplementary immunization.

Key recommendations

- coordinated spring NIDs should continue in participating countries up to and including 2002, vaccine supply allowing;
- four NIDs rounds should be conducted in Afghanistan each year until transmission becomes more localized, primarily using house-to-house vaccination;
- AFP surveillance should be monitored at each sub-national administrative unit;
- priority handling and testing should be given to specimens from children with fewer than three doses of vaccine, clinical poliomyelitis, or exposure outside the country; and
- all cross-border cases of AFP should be notified as quickly as possible to the originating country and WHO.

Grandfather
taking his family
for NID
vaccination, Iraq
1999



Parents with
children
entering from
Afghanistan for
cross-border
immunization,
Pakistan 2000



INCIDENCE OF POLIOMYELITIS

INCIDENCE IN THE EASTERN MEDITERRANEAN REGION

The status of poliovirus circulation in 1990–1995 was complex in the countries and areas of the Eastern Mediterranean Region. Routine immunization services could not be established throughout Afghanistan and poliomyelitis remained endemic, probably throughout the entire country, although official reports of cases were not available from 1992 to 1996. In Pakistan, problems in sustaining the good achievements of the 1980s in the immunization programme had resulted in some decline in infant immunization coverage; poliomyelitis also remained endemic throughout the country, although with a marked decrease in reported cases following NIDs in 1994 (Table 4). After the marked decline in reported cases following the first NIDs, Pakistan again suffered from a major epidemic of poliomyelitis in 1997, reporting 1147 cases. The epidemic severely affected two provinces, with cases reported from most districts.

In Iraq, the disturbances following the Gulf War had resulted in poliomyelitis again becoming widespread in the country. In the Islamic Republic of Iran, excellent routine services and effective NIDs from 1994 had reduced the incidence of poliomyelitis to almost zero, but with repeated importations from Pakistan and Afghanistan. By 1996, it seemed probable that the Islamic Republic of Iran, Jordan, Lebanon, the Syrian Arab Republic and Palestinian Self-Rule Areas had either stopped transmission or had the potential for such an achievement in the immediate future. Subsequent progress has confirmed this opinion, although the Islamic Republic of Iran has indeed continued to experience imported or import-related cases from neighbouring Pakistan and Afghanistan, including two such cases in 2000.

INCIDENCE IN THE EUROPEAN REGION

During the period 1990–1995 the reported incidence of acute poliomyelitis in the European Region had remained between 175 and 369 cases a year (Table 4), reflecting both continuing endemic and epidemic spread. The undoubted progress achieved by the increased immunization coverage of the 1980s was being offset by the occurrence each year of a small number of major

**Operation
MECACAR
reduced the
incidence of new
cases, as well as
the geographical
spread.**

Table 4.

Reported number of poliomyelitis cases in countries and areas participating in Operation MECACAR, 1990–2000

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 ¹	
Eastern Mediterranean Region	Afghanistan	48	2	NA	NA	NA	NA	19	59	150	107	
	Islamic Rep. Iran	15	55	44	107	93	101	12	13	4	3 ²	
	Iraq	56	186	120	75	63	34	24	34	37	88	
	Jordan	0	14	18	0	4	0	0	0	0	0	
	Lebanon	2	5	NA	0	2	0	0	0	0	0	
	Pakistan	777	1147	1046	1803	527	508	341	1147	341	558	
	Syrian Arab Republic	13	24	22	0	2	4	0	0	0	1 ²	
	Palestinian Self-Rule Areas	NA	NA	NA	NA	NA	NA	NA	0	0	0	
	Total MECACAR	911	1433	1250	1985	691	647	377	1213	441	796	270
	Total Region	1499	2129	1901	2451	1015	798	535	1261	554	910	425
European Region	Armenia	12	3	1	0	5	3	0	0	0	0	
	Azerbaijan	182	21	22	69	16	5	0	0	0	0	
	Georgia	31	6	0	0	0	0	0	0	0	0	
	Kazakhstan	7	5	6	1	4	1	0	0	0	0	
	Kyrgyzstan	1	4	5	0	0	0	0	0	0	0	
	Russian Federation	12	11	4	1	2	150	2	0	0	0	
	Tajikistan	2	115	5	14	26	0	0	1	0	0	
	Turkey	21	25	25	24	32	32	19	6	26	0	
	Turkmenistan	40	16	4	2	6	8	2	0	0	0	
	Uzbekistan	42	20	11	68	117	1	0	0	0	0	
Total MECACAR	350	226	83	179	208	200	23	7	26	0	0	
Total Region	369	313	175	202	231	206	192	7	26	0	0	

¹Provisional data reported through January 2001.

²Imported/import-related cases not included in totals.

epidemics, occurring in separate areas. These epidemics appeared to reflect the accumulation of susceptible individuals, an inevitability with incomplete immunization coverage. As typical examples, epidemics had occurred with the breakdown of reliable immunization services in Azerbaijan and Uzbekistan and later in the Russian Federation (in Chechnya) (Table 4).

If Operation MECACAR NIDs were effective, it was anticipated that the number of susceptible individuals within any country, even within all communities, would be reduced to such a low level that wild poliovirus transmission would be unlikely to be sustained. To a great extent this is what happened as Operation MECACAR progressed and, in the European Region, the major epidemics of 1995 and 1996 occurred in countries not originally participating in Operation MECACAR.

The Russian Federation joined Operation MECACAR from 1996 following the outbreak in the under-vaccinated population of Chechnya in 1995. Because of substantial problems in Albania for decades in the delivery of potent vaccine under adequate cold-chain protection which led

	Number of polio cases reported	Trend	Number of endemic countries and areas	Number of districts with endemic polio ¹	Cases in MECACAR countries and areas	Trend	
Eastern Mediterranean Region	1990	1499	Baseline	8	911		
	1991	2129	+42%	8	1433		
	1992	1901	+27%	7	1250		
	1993	2451	+64%	6	1985		
	1994	1015	-32%	6	691	Baseline	
	1995	798	-47%	5	647	-6%	
	1996	535	-64%	4	377	-45%	
	1997	1261	-16%	4	1213	+76%	
	1998	554	-63%	8	118	441	-36%
	1999	910 ²	-39%	7	195	796 ²	+15%
	2000 ³	425 ²	-72%	6	113	270 ²	-61%
European Region	1990	369	Baseline	16	350		
	1991	313	-15%	15	276		
	1992	175	-53%	14	105	83	
	1993	202	-45%	14	64	179	
	1994	231	-37%	13	74	208	Baseline
	1995	206	-44%	10	43	200	-4%
	1996	192	-48%	8	45	23	-89%
	1997	7	-98%	2	2	7	-97%
	1998	26	-93%	1	5	26	-88%
	1999	0	-100%	0	0	0	-100%
	2000 ³	0		0	0	0	

Table 5.

Trend analysis of reported cases of poliomyelitis by each entire WHO region, by districts and in countries and areas of Operation MECACAR 1990-2000

¹ Districts defined differently by each WHO region.

² Not including 4 imported/import-related cases in 1999 and 2 in 2000.

³ Provisional data through January 2001.

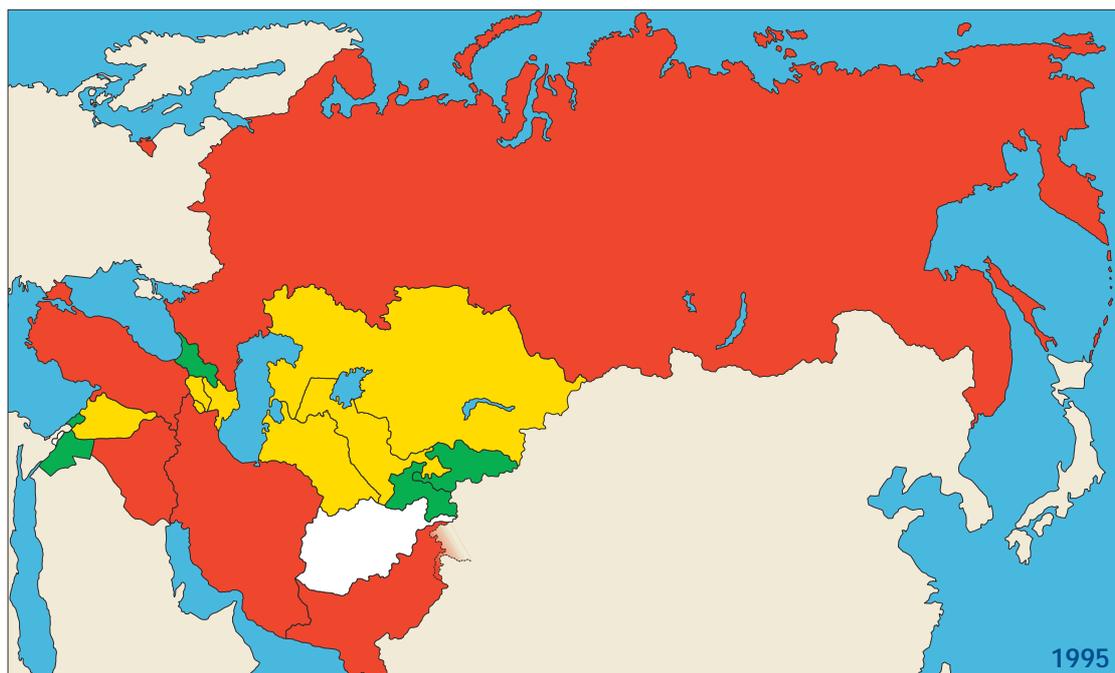
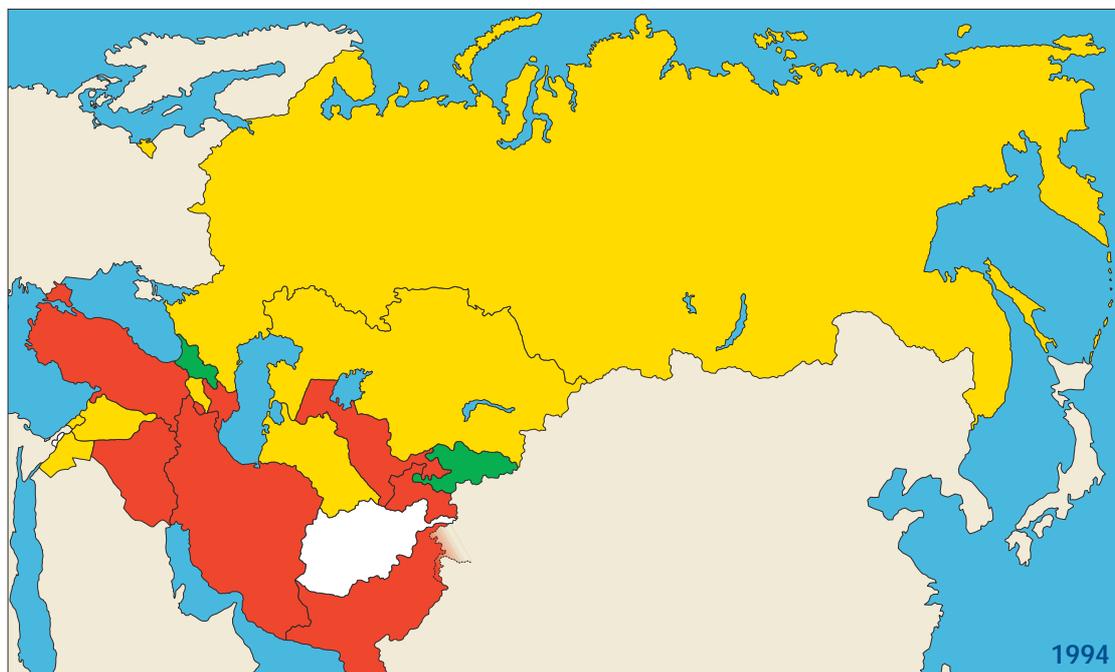
to an accumulation of susceptible adults and children, the outbreak of poliomyelitis in 1996 occurred following introduction of wild poliovirus from outside the European Region despite earlier NID vaccination of children under 5 years of age; in the Federal Republic of Yugoslavia, cases occurred in the ethnic Albanian population who had long-standing problems accepting child immunization services provided by the Yugoslav government.

In addition to the much reduced incidence of new poliomyelitis cases, Operation MECACAR made a significant impact in reducing the geographic extent of endemic disease, reflected by a marked decrease in the number of known infected countries/areas or geopolitical units within countries, such as provinces, governorates or districts (Table 5, Fig. 4).

Figure 4.
MECACAR
countries and areas
reporting cases of
poliomyelitis,
1994-2000

Number of cases

- >10 polio cases
- 1-10 polio cases
- 0 polio cases
- No report



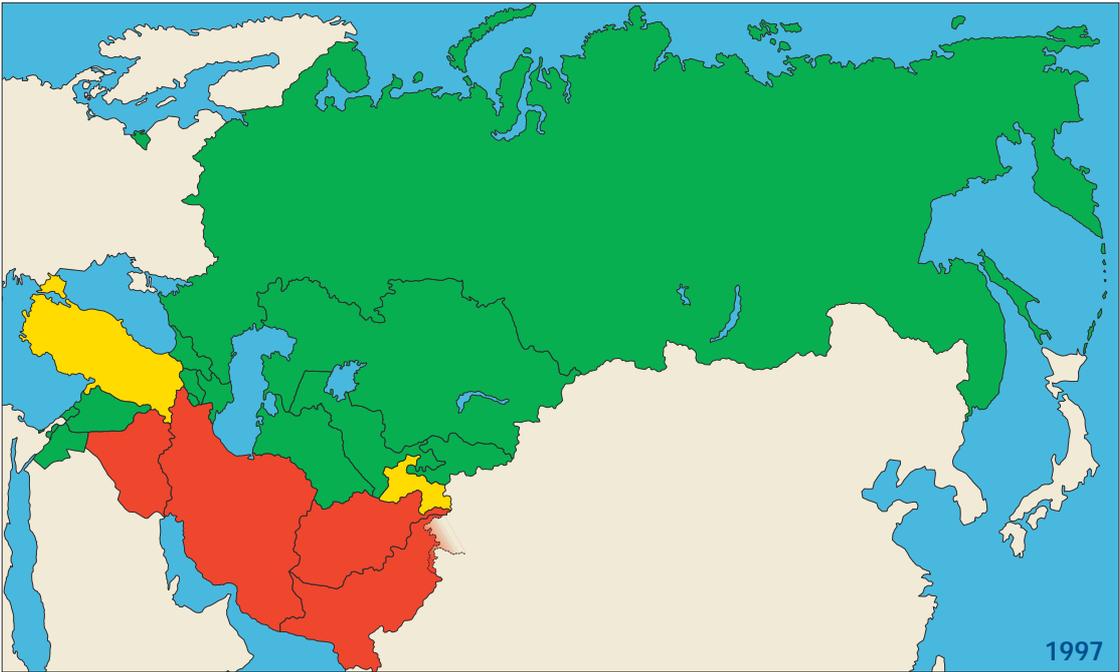
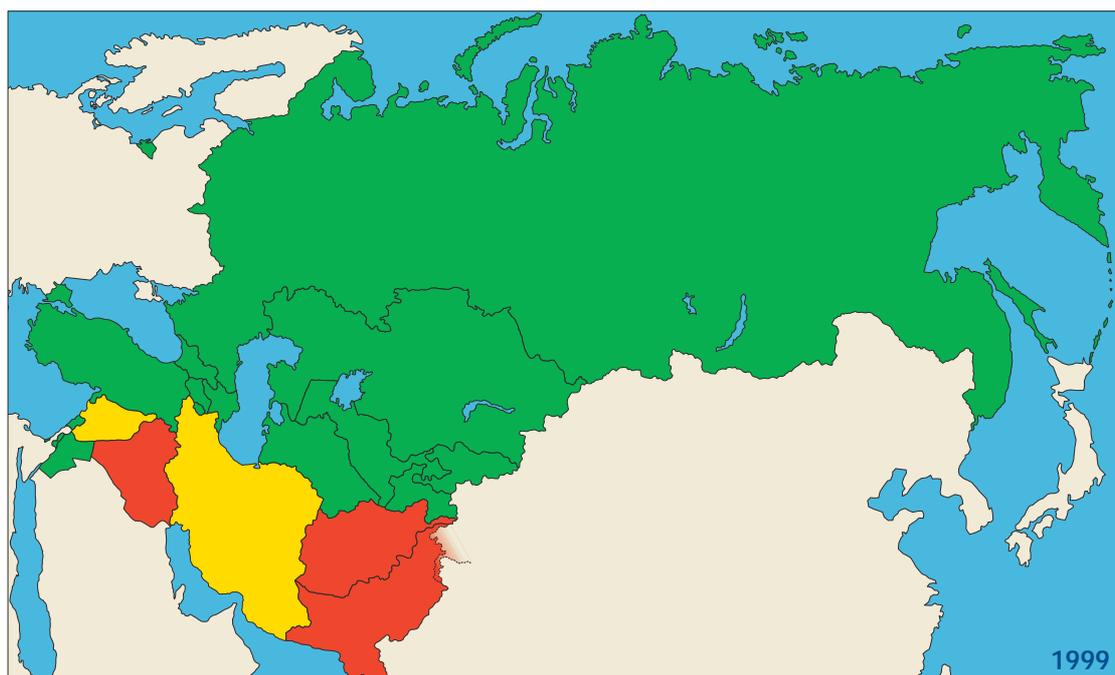
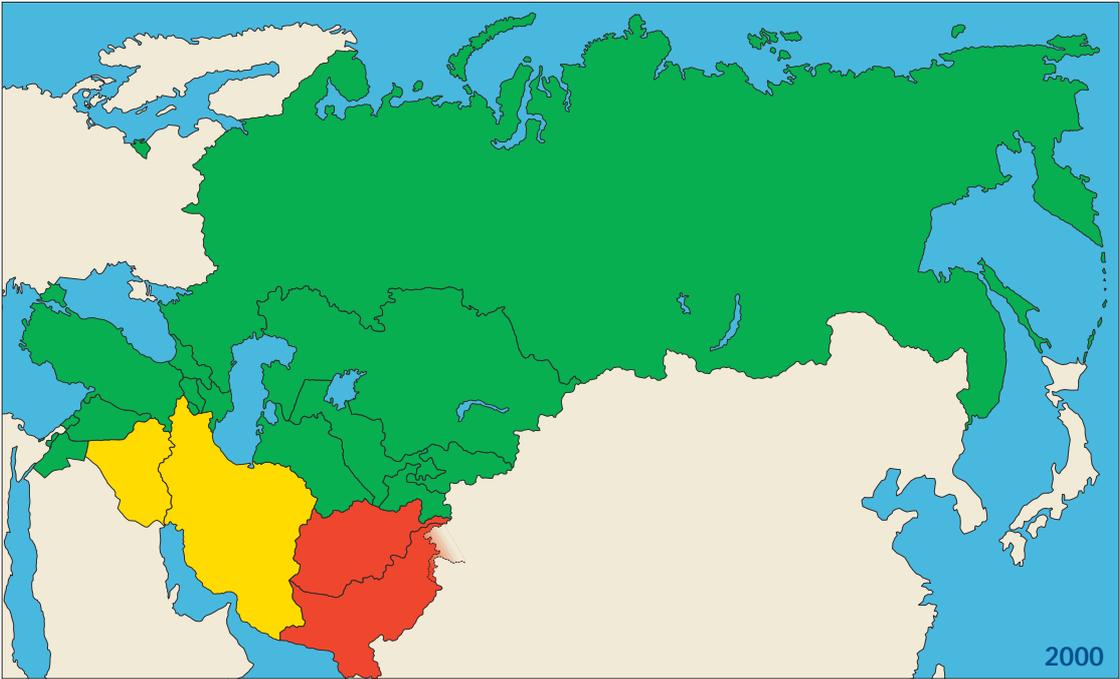


Figure 4 continued.
MECACAR countries
and areas reporting
cases of poliomyelitis,
1994-2000

Number of cases

- >10 polio cases
- 1-10 polio cases
- 0 polio cases
- No report





National virologists
welcome WHO
consultant,
Uzbekistan 2000



Willing but con-
cerned participant
in NIDs, Iran 1995



SURVEILLANCE FOR CASES OF ACUTE FLACCID PARALYSIS

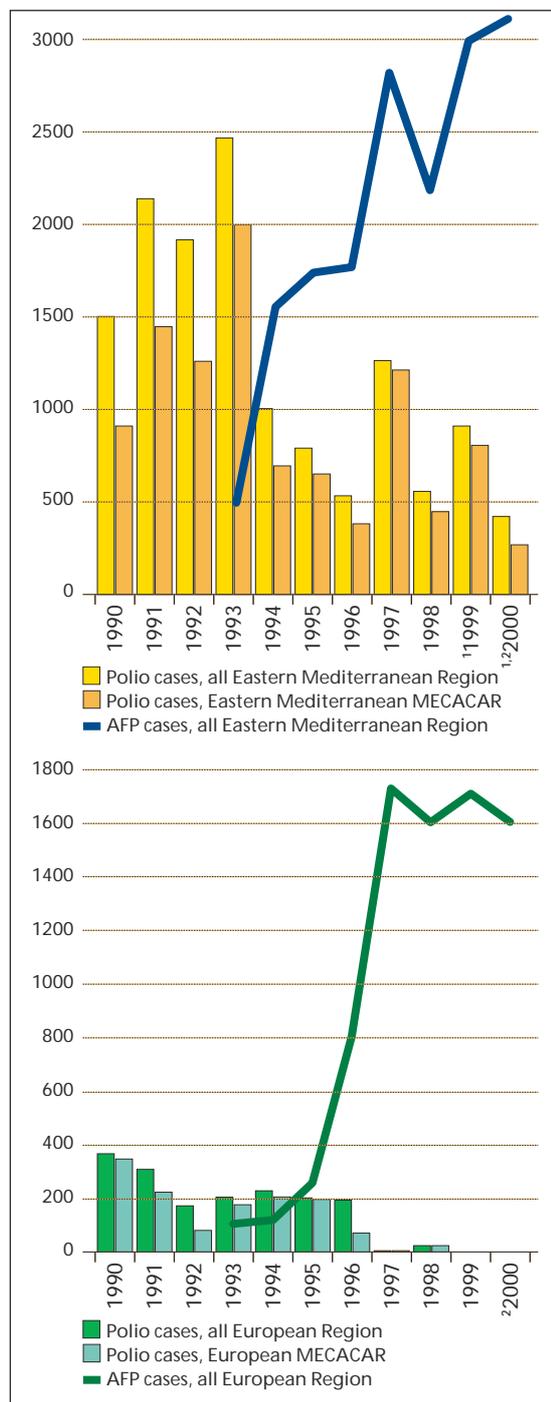
AFP SURVEILLANCE PERFORMANCE INDICATORS

Fully operational AFP surveillance meeting all performance indicator standards is a highly valuable tool both for promptly detecting wild poliovirus circulation as well as for providing evidence over time on the absence of poliovirus circulation when transmission has indeed been interrupted. The background rate of flaccid paralytic illnesses of recent onset provides a measure of the expected incidence of disease not due to wild poliovirus for assessing surveillance sensitivity. Virological testing in WHO-accredited laboratories of faecal specimens adequately taken and handled provides a solid basis for disconfirmation of poliovirus infection as a cause of the paralysis. In order to be effective, all steps in virologic surveillance must function well, from the field investigation, specimen collection and handling to the testing of specimens in a laboratory that has proven sensitivity and accuracy, backed up by viral characterization in the reference laboratories of the global polio network. The training, monitoring, supervision, evaluation and problem solving which have taken place in MECACAR countries and areas, supported by the polio partnership, has taken the quality of surveillance and virologic testing to very high levels.

A recommendation was made at the first coordination meeting, held in January 1995, that high priority be given to AFP surveillance, including linking virological investigations to epidemiological data on AFP and suspected poliomyelitis cases. The second coordination meeting, held in September 1995, further discussed the WHO criteria by which surveillance should be evaluated, including timely receipt of reports, aiming to achieve a rate of non-polio AFP case detection at or above 1 per 100 000 children aged under 15 years, 80% case investigation within 48 hours, collection of two faecal specimens within 14 days of onset on at least 80% of AFP cases and high 60-day follow-up of cases. The meeting also defined criteria for the evaluation of virological surveillance, including assessment of laboratory competence, and of timely specimen collection and transportation. Finally, the meeting recommended the regular monitoring of such performance indicators. The meeting recommendations specified that the countries and areas reaching a non-polio AFP rate of 1 per 100 000 with two specimens collected within 14 days from at least 65% of AFP cases should switch to a virologically based AFP case classification. Participants also

Figure 5.

Reported cases of poliomyelitis and total AFP in countries and areas of the WHO Eastern Mediterranean and European Regions, and reported cases of poliomyelitis in MECACAR countries and areas of each region, 1990-2000



¹ Not including 4 imported/import-related cases in 1999, 2 in 2000.

² Provisional data through January 2001.

recommended that virological services should be made available to all areas by strengthening national laboratories or through rapid transportation of specimens to accredited laboratories in other countries. The third coordination meeting, held in October 1996, re-emphasized the main performance indicators by which surveillance should be evaluated. In addition it was indicated that the extent of surveillance should cover the whole population so that sub-national analysis of the main indicators reflect a high level of surveillance in all populated areas. The data on numbers of polio cases in MECACAR countries and areas of both regions for 1990-2000 as well as total number of polio cases and total AFP cases in all countries and areas of both regions are summarized in Fig. 5. The data on annual primary AFP surveillance indicators in MECACAR countries and areas for the period 1996-2000 are given in Table 6 and Fig. 6.

STATUS OF SURVEILLANCE IN 1996

By the third coordination meeting, in October 1996, the Eastern Mediterranean Region reported that all except one of the MECACAR countries and areas of the Region were conducting AFP surveillance and that two, Jordan and the Islamic Republic of Iran, had detected non-polio AFP rates over 1 per 100 000. The Regional Office was regularly publishing a newsletter, "POLIOFAX", with data on the incidence of detected AFP and confirmed polio cases. Nineteen countries in the European Region were routinely reporting AFP surveillance data. The overall non-polio AFP rate had increased from 0.24 to 0.53 per 100 000 children for the Region.

Eastern Mediterranean Region	AFP surveillance established	Non-polio AFP rate per 100 000 children under 15 years					Percentage of two adequate stool specimens within 14 days				
		1996 ¹	1997	1998	1999	2000 ²	1996	1997	1998 ³	1999	2000 ²
Afghanistan	1997	NA	0.10	0.66	0.67	1.19	NA	46	50	53	49
Islamic Rep. of Iran	1993	1.55	1.30	1.43	1.14	1.15	66	80	76	77	69
Iraq	1994	0.42	1.80	1.19	1.66	2.41	39	76	72	80	85
Jordan	1993	1.00	1.40	1.80	1.56	1.34	85	67	76	83	92
Lebanon	1994	0.38	0.30	1.26	1.60	1.26	60	67	0	21	91
Pakistan	1995	0.34	0.73	0.71	1.22	1.48	56	43	61	70	73
Syrian Arab Rep.	1993	1.20	1.18	1.32	1.27	1.50	67	83	98	82	81
Palestinian Self-Rule Areas	1995	0.73	1.03	1.21	1.00	0.69	NA	75	100	92	100
European Region											
Armenia	1995	0.75	1.45	2.05	2.48	2.37	100	93	68	91	86
Azerbaijan	1994	0.50	0.54	0.51	0.90	0.68	0	77	67	86	94
Georgia	1996	0.69	0.55	1.32	0.82	1.57	22	86	81	70	89
Kazakhstan	1992	2.18	0.69	1.29	0.99	1.41	100	60	74	85	85
Kyrgyzstan	1995	0.68	1.39	1.25	1.18	1.43	100	63	70	79	87
Russian Federation	1992	1.04	2.76	1.24	1.91	1.70	72	71	69	79	87
Tajikistan	1996	0	0.67	0.75	1.55	1.59	0	71	63	87	83
Turkey	1991	0.32	0.62	1.13	1.18	1.27	34	65	70	79	84
Turkmenistan	1995	0.56	0.56	1.38	2.22	1.98	67	56	57	78	97
Uzbekistan	1996	0.08	0.15	0.97	1.19	1.23	29	86	87	90	89

Table 6.

Non-polio AFP rate in children aged < 15 years and specimen collection in MECACAR countries and areas, 1996-2000

¹Reported data before 1997 for the European Region (1998 for Russian Federation) may include cases of isolated facial paralysis as AFP, which were not included subsequently.

²Provisional data reported through January 2001.

³Reduced reported percentage of specimen collection within 14 days in some countries of the European Region due to improved data quality control since 1998.

The participants concluded that, for 1997, the highest priority was to institute or improve AFP surveillance and that an equally high-priority was to improve the laboratory network to ensure adequate laboratory support for each country.

STATUS OF SURVEILLANCE IN 1997

By the fourth coordination meeting, in October 1997, MECACAR countries and areas in the Eastern Mediterranean Region had made significant progress towards developing effective surveillance. Six of the eight countries were provisionally reporting non-polio AFP rates above 1 per 100 000 in 1997, the two not doing so being Afghanistan, where surveillance was virtually impossible, and Lebanon, whose small population make target rates unstable. Ultimately, Pakistan also reported below 1 case per 100 000 for 1997. Throughout the Region, over 60% of detected AFP cases had adequate samples obtained within 14 days of onset of paralysis.

AFP detection increased throughout the European Region, reaching an annualized rate of non-polio AFP for 1997 of 1.1 per 100 000 children compared with a final rate of 0.7 in 1996. It was later determined that many Member States of the European Region often included cases of isolated facial paralysis (no limb paralysis) as AFP, falsely increasing the reported non-polio AFP rates. Thirty-two countries now reported having an AFP surveillance system, increasing from 25 in 1995 and 30 in 1996. In 1996, only two out of the ten MECACAR countries in Europe had reached an AFP rate above 1 per 100 000, but this had increased to four provisionally in 1997. Performance indicators were by this time being regularly published in a "EURO POLIO PAGE", providing feedback to countries. There was wide disparity among countries, however, the overall proportion of AFP cases with two specimens within 14 days had reached 79% for 1997. The regional laboratory network performance remained suboptimal in terms of national laboratories meeting WHO-accreditation criteria as well as in the flow of information and isolates for confirmation and characterization by the regional reference laboratories.

Participants at the meeting, acknowledging that surveillance was now established and had improved significantly, recognized that it had still not reached the levels required for eventual certification of poliomyelitis eradication. They also agreed that national aggregate data could be concealing differences between geopolitical subdivisions and that continued focal transmission in these areas remained a possibility. This focus on strong surveillance performance indicators in sub-national areas requires careful monitoring and supervision in each country. The participants also acknowledged that the laboratory network had become established, but regretted that few laboratories had yet obtained accreditation. Finally, the meeting reviewed options for surveillance in geographic areas with high-risk populations and where access was limited or difficult. These options included specific time-limited activities aimed at AFP surveillance and collection of specimens from contacts if detection of the case had been delayed, where problems had resulted in low AFP case detection or in areas where polio-compatible cases had occurred. The possibilities of introducing active case-searching, ensuring high-quality "zero" reporting, and retrospective hospital record reviews were also discussed.

STATUS OF SURVEILLANCE IN 1998

Provisional data for 1998 were discussed at the fifth coordination meeting in October 1998. In the Eastern Mediterranean Region, AFP surveillance had continued to improve rapidly in critical areas. During 1997-1998, AFP surveillance had been functioning or initiated in all MECACAR countries and areas of the Eastern Mediterranean Region. In Afghanistan, AFP surveillance was initiated in 1997 and the non-polio AFP rate provisionally reached 0.67 per 100 000 in 1998. The sensitivity of surveillance, indicated by the regional average non-polio AFP rate, improved from 0.85 per 100 000 in 1997 to 0.9 per 100 000 in 1998. In 1998, six of the eight MECACAR countries of the Region had achieved or exceeded the recommended minimum non-polio AFP rate of 1.0

per 100 000. Adequate stool specimens were collected from 66% of all AFP cases reported in 1998 by the eight MECACAR countries and areas of the Region.

In the European Region, AFP surveillance continued to improve. Based on these improvements, all countries of the Region converted to a virological scheme for classification of AFP cases for 1997 and onwards (except Tajikistan which used a virological classification scheme from 1999 and onwards). In 1998, AFP surveillance was operational in 35 countries, including all the MECACAR countries in the Region. The regional average non-polio AFP rate ultimately was 1.02 per 100 000, with adequate stool specimens obtained in 74% of cases, compared to a non-polio AFP rate of 1.12 per 100 000 and adequate stool specimens obtained in 69% of cases in 1997. Data for the Russian Federation and Ukraine for 1997 included cases of isolated facial paralysis, whereas other countries' final annual data for 1997 (and all data for 1998 and later) excluded such cases. Weekly case-based reporting of information on AFP cases (or the absence of AFP cases) to the WHO Regional Office was implemented by 31 countries. Independent assessments of quality of AFP surveillance conducted in 14 countries of the European Region (including all MECACAR countries except Tajikistan), showed that AFP surveillance improved in almost all high-risk areas of the Region, particularly in Armenia, Turkey and Turkmenistan, and highlighted opportunities for further improvement in those countries as well as in others not meeting performance criteria.

The recommendations from the fifth coordination meeting re-emphasized the value of surveillance monitoring and evaluation and ongoing data analysis in highlighting areas for improvement towards achieving the targets for surveillance performance indicators.

STATUS OF SURVEILLANCE IN 1999

Provisional data for 1999 were discussed at the sixth coordination meeting in October 1999. All the countries and areas of the Eastern Mediterranean Region had established a system of AFP surveillance, including countries and areas in civil conflict and war. During 1999, AFP surveillance continued to improve throughout the Region and for the first time the AFP rate exceeded 1 per 100 000 children under 15 years as compared to rates of 0.49 in 1994, 0.71 in 1996 and 0.88 in 1998. The overall adequate stool specimen collection indicator was 67% for the Region. More countries and areas reached the required level of AFP surveillance sensitivity. The quality of surveillance in countries and areas of the Region that were at high risk of virus importation, notably the Islamic Republic of Iran and the Syrian Arab Republic, was high and systems in these countries and areas had already demonstrated their ability to detect virus importation promptly.

In the European Region, AFP surveillance improved further in 1999. The regional average non-polio AFP rate was 1.17 per 100 000, with adequate stools specimens obtained in 74% of cases. Of the 17 recently endemic countries, including all MECACAR countries, all but four (Albania,

Figure 6.
AFP surveillance and specimen collection in children aged <15 years, MECACAR countries and areas, 1996-2000

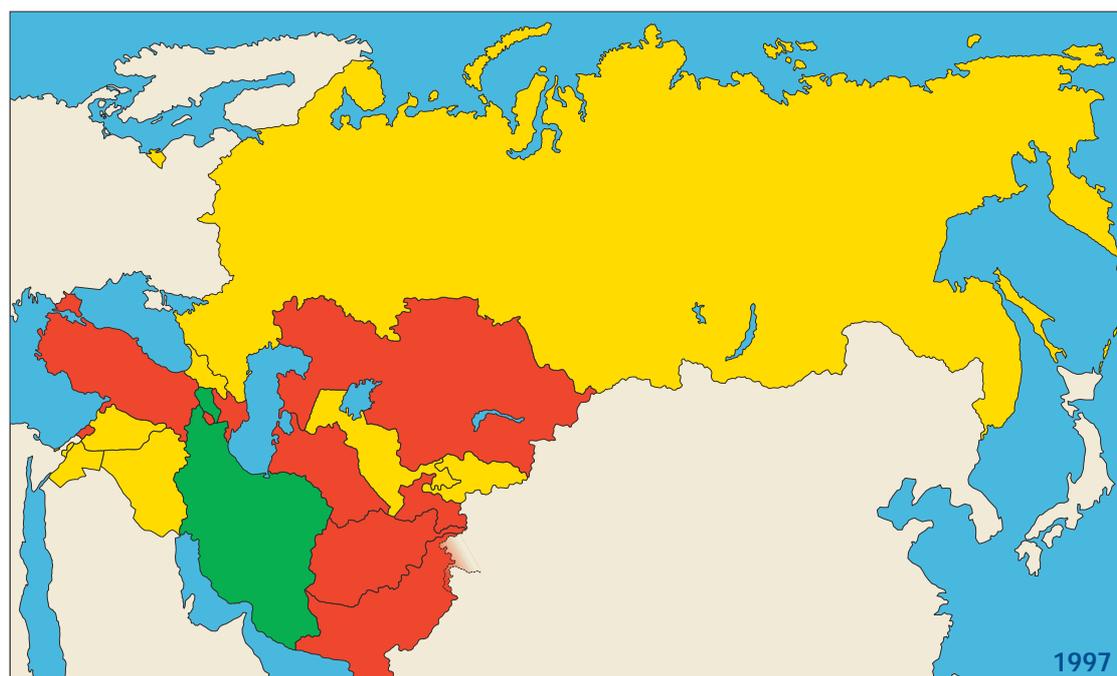
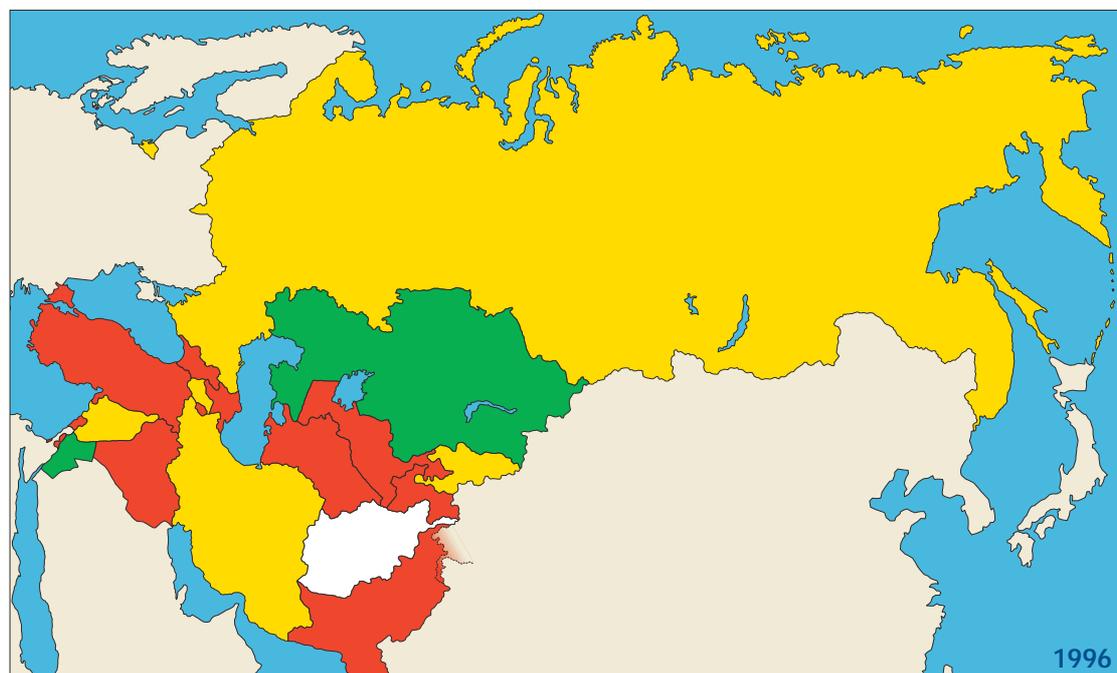
Surveillance indicators

■ Non-polio AFP rate <1.0 per 100 000 children under 15 years of age and <80% of total AFP cases with 2 specimens collected within 14 days of onset of paralysis.

■ Non-polio AFP rate \geq 1.0 per 100 000 children under 15 years of age or \geq 80% of total AFP cases with 2 specimens collected within 14 days of onset of paralysis.

■ Non-polio AFP rate \geq 1.0 per 100 000 children under 15 years of age and \geq 80% of total AFP cases with 2 specimens collected within 14 days of onset of paralysis.

□ No report.



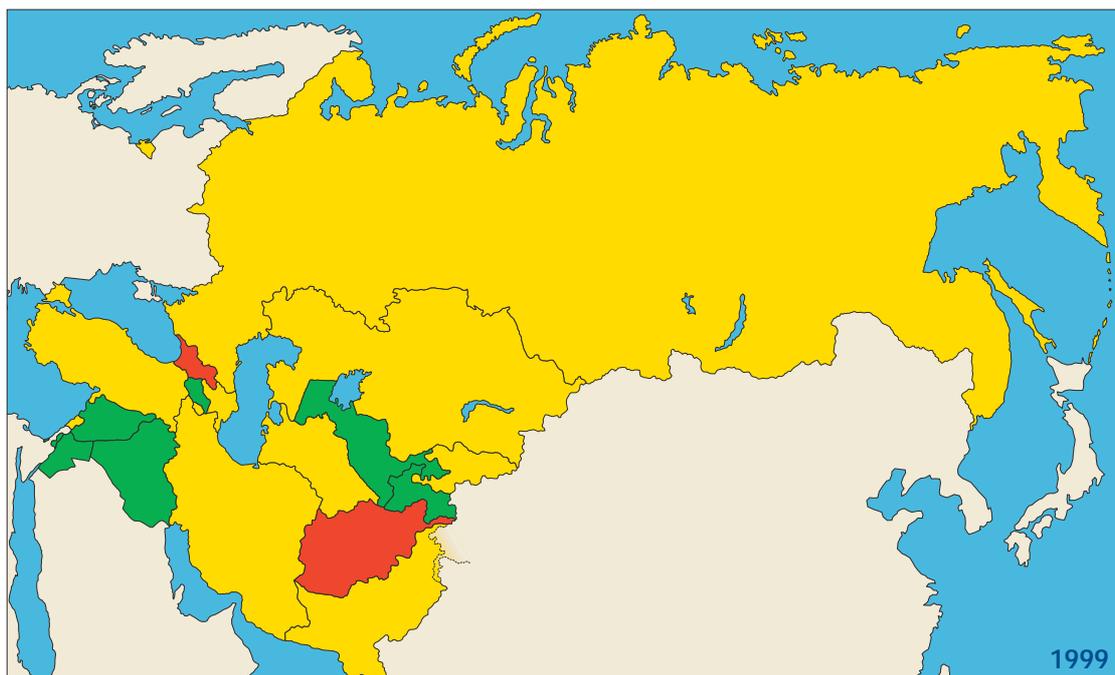
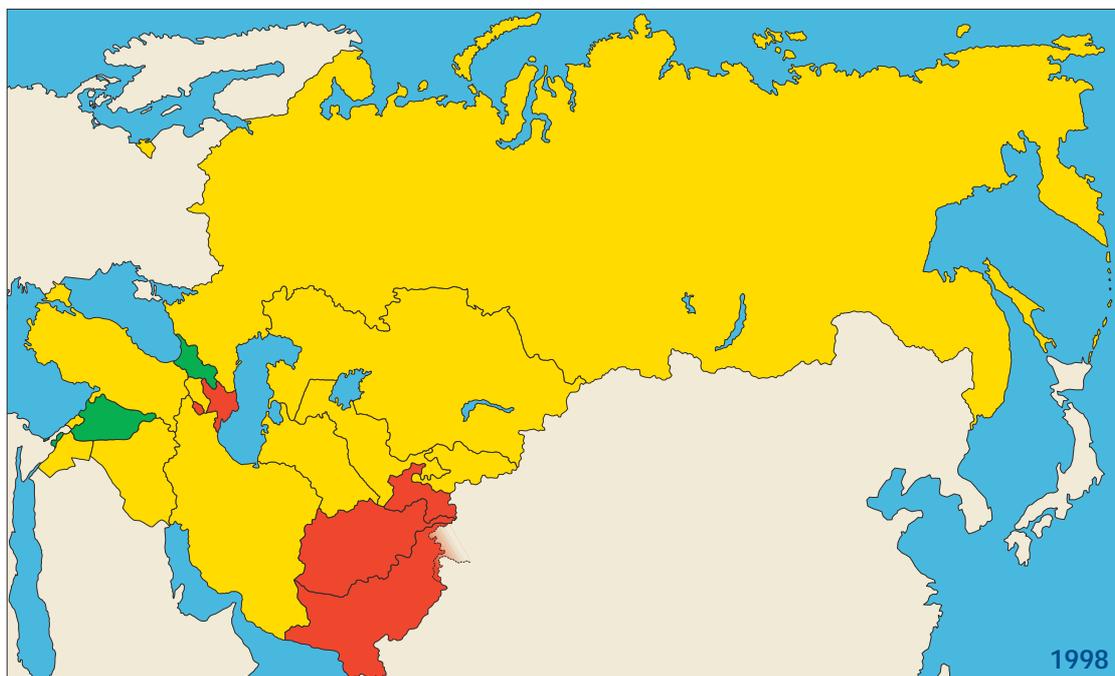
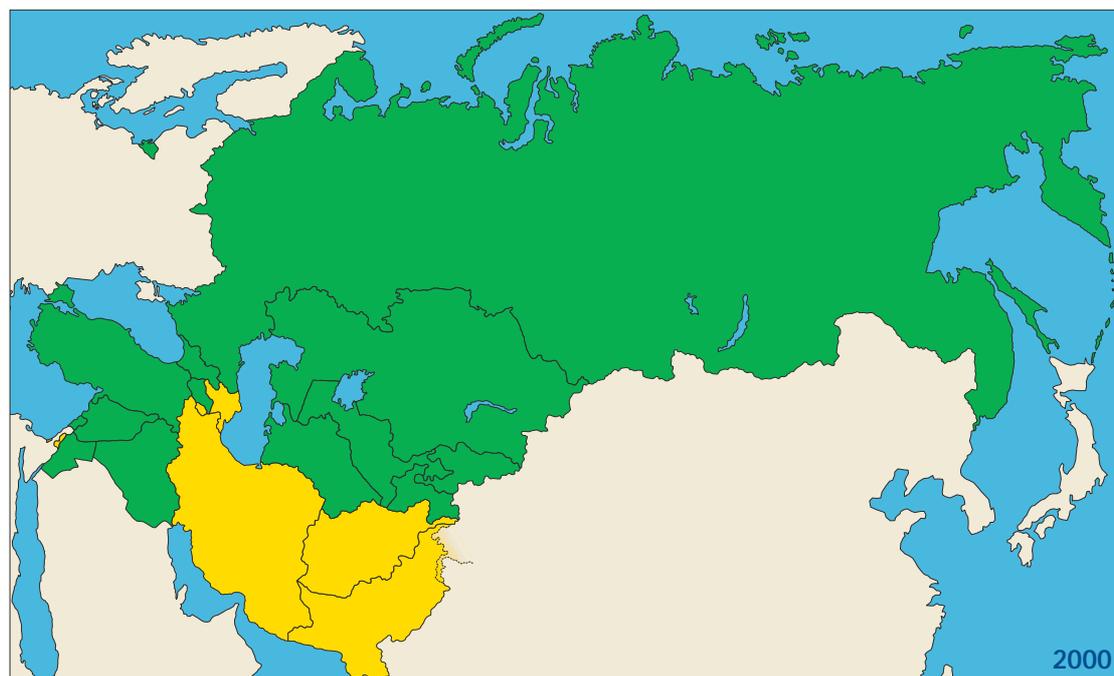


Figure 6 continued.
AFP surveillance and specimen collection in children aged <15 years, MECACAR countries and areas, 1996-2000

Surveillance indicators

- Non-polio AFP rate ≥ 1.0 per 100 000 children under 15 years of age or $\geq 80\%$ of total AFP cases with 2 specimens collected within 14 days of onset of paralysis.
- Non-polio AFP rate ≥ 1.0 per 100 000 children under 15 years of age and $\geq 80\%$ of total AFP cases with 2 specimens collected within 14 days of onset of paralysis.



Azerbaijan, Bosnia and Herzegovina and Georgia) were approaching or exceeding the sensitivity and specimen collection standards of AFP surveillance. All 39 countries conducting AFP surveillance were reporting case-based AFP surveillance data weekly to the Regional Office. By the end of 1999, completeness of weekly reporting was 86% and timeliness was 82%. Training and assessment programmes continued, with emphasis being placed on monitoring AFP surveillance performance in sub-national areas to allow appropriate targeting of corrective interventions.

The participants agreed that the surveillance indicators were improving, approaching certification quality standards and that all prior recommendations must continue to be applied. Monitoring of sub-national indicators remains important, as does attention to prompt shipment of faecal specimens in appropriate conditions to the designated, accredited laboratory.

STATUS OF SURVEILLANCE IN 2000

In the Eastern Mediterranean Region, the provisional non-polio AFP rate reached 1.33 per 100 000 children under 15 years in 2000. The percentage of AFP cases with adequate stool specimens reached 70% overall in 2000. The number of countries and areas reporting 80% or more AFP cases with adequate stool samples increased. The quality of surveillance improved sub-nationally. A computerized regional database was developed to include information on all AFP

cases. All countries and areas had computerized databases and were reporting weekly data on AFP and on laboratory results.

In the European Region, the progress seen in 1999 continued, with all but three recently endemic countries meeting the sensitivity and specimen collection standards of AFP surveillance (Albania, Azerbaijan [with high specimen collection], and Bosnia and Herzegovina). The provisional regional average non-polio AFP rate was 1.12 per 100 000, with adequate stool specimens obtained in 80% of cases; the provisional averages for the 17 recently endemic countries were 1.40 and 87%, respectively. Support to country workshops, surveillance supervision and specimen transport action continued with improved sub-national indicators of AFP surveillance activities. Completeness of weekly reporting was 91% and timeliness was 81%.

THE POLIO LABORATORY NETWORK

To provide meaningful data, virologic testing of faecal specimens needs to be in a laboratory that is sensitive, accurate and provides results in a timely manner and therefore WHO has set objective criteria for annual laboratory accreditation. National laboratory findings are confirmed in regional reference laboratories, which also determine whether poliovirus isolates are derived from OPV or are wild poliovirus (intratypic differentiation). Such differentiation is conducted at three laboratories for MECACAR countries and areas of the Eastern Mediterranean Region and at two regional reference laboratories for MECACAR countries of the European Region. Specialized laboratories conduct genomic sequencing to determine the familial origin and derivation of wild poliovirus isolates. These various laboratories constitute the polio laboratory network. Timely transport to each laboratory under appropriate conditions is monitored and continues to improve, although some weaknesses persist. Substantial efforts have been made to provide appropriate equipment, supplies, cell lines and training of staff for network laboratories to strengthen performance, supported by the coalition of international partners, which has allowed the polio network to reach high levels of performance for each region.

In the Eastern Mediterranean Region, there are five countries with WHO-accredited national laboratories in the eight MECACAR countries and areas. These have been fully accredited since 1998 (except for Iraq, in 1999). In the European Region, there are five national laboratories in the ten MECACAR countries. Of the five national laboratories, all but one were WHO-accredited since 1999. In the Russian Federation and Turkey, there are also sub-national laboratories that also must meet annual accreditation criteria. Through appropriate transportation and inter-country collaboration, all specimens from AFP cases in the Eastern Mediterranean Region have been tested in accredited laboratories since 1998 (including cases in Iraq) and in the European Region, since the end of 1999.

The Islamic Republic of Iran and the Syrian Arab Republic surveillance systems had demonstrated their ability to detect virus importation promptly in 1999.

Rotary volunteers
opening the NIDs
with political and
community leaders,
Bulgaria 1995



A mobile
vaccination team
during NIDs,
Afghanistan 2000



PARTNERSHIP WITHIN OPERATION MECACAR

Apart from the impact of the coordinated activities on the incidence of poliomyelitis, perhaps the most striking phenomenon in Operation MECACAR, and a major factor in its success, was the development and guarantee of partnership among all agencies – and usually individuals, as well.

Because the MECACAR countries and areas of the two WHO regions involved have many different characteristics, the regional offices also needed to function in different ways. Yet the common planning in Operation MECACAR, problem-solving through shared experience, coordination of joint activities and free sharing of information (including changing national plans for supplementary immunization and up-to-date surveillance data), made the already strong partnership between the regional offices (and with the WHO global coordination team for the poliomyelitis eradication initiative) even stronger operationally.

Fulfilment of partnerships in Operation MECACAR occurred at many different levels, but falls into two categories, that occurring within countries and areas and that which was predominantly international.

NATIONAL PARTNERSHIPS

Within each country, the responsibility for Operation MECACAR-related activities rested with the various ministries of health. The implementation of NIDs, however, permitted a largely unprecedented liaison to take place between many different individuals, institutions and ministries and among various sectors of public life. While it is impossible to define each contribution, most areas benefited from the inputs of certain key individuals in a number of ways:

- at the national level, heads of state, government ministers, and religious and other leaders endorsed the campaigns, frequently providing public endorsement by giving the first vaccine dose in the annual campaigns;
- at a more peripheral level, leading public figures provided similar endorsement within their own communities;

Conduct of NIDs permitted a largely unprecedented liaison to take place between many different individuals, institutions and ministries and among different sectors of public life.

- public personalities in the media, theatre and, notably, sports encouraged parents to cooperate in protecting their children. With their personal followings, this was always an important contribution;
- television and radio stations gave much broadcast time, informing the public of the campaign details and objectives, the background of immunization, poliomyelitis as a disease, even the need for surveillance;
- other ministries gave time, support, staff and additional resources to allow health staff to reach all communities. In a number of countries and areas, the armed defence services cooperated in the campaigns, providing means of transport such as land vehicles or helicopters to transport staff or vaccine to distant communities; and
- a major contribution was through the involvement of community groups, women's associations, Rotarians, scouts, and others, who had a key role in informing, motivating and actually providing support during immunization sessions.

Without these massive and well-coordinated inputs, the consistently high coverage rates reported could not have been achieved. A whole range of non-health personnel clearly demonstrated their willingness to be involved in a programme aimed at the health of the country's children.

INTERNATIONAL PARTNERSHIPS

While the inputs within the countries and areas allowed successful implementation of NIDs, mop-up activities and, later, the development of surveillance services, careful, well-coordinated planning had already taken place months before the first drops of vaccine were administered.

There were two key elements in this advance planning:

- the successful holding of coordination meetings each year, attended by both national and international staff. As the authorities responsible for operational activities, participation of national representatives provided the key element in making these meetings successful by sharing experiences, making proposals, defining resource needs and constraints, and determining future policies and priorities; and
- the willingness of the international agencies to plan details together, to commit staff to joint activities, to provide substantial financial, technical and personnel resources for Operation MECACAR, including vaccine purchase and, above all, to work quickly and effectively in the development of efficiently organized campaigns.

The contributions of the different agencies were significant and varied from country to country. As a brief and incomplete summary, the following contributions were consistently made, with each agency ensuring its support to guaranteeing the success of Operation MECACAR:

World Health Organization**Technical assistance:**

- ✓ Overall coordination of Operation MECACAR
- ✓ Planning
- ✓ Technical and programme guidance
- ✓ Guidelines and standardization
- ✓ Outbreak investigation
- ✓ Guidance and support for coordination meetings
- ✓ Laboratory network coordination and accreditation
- ✓ Monitoring and development of reporting systems
- ✓ Training in surveillance
- ✓ Evaluation
- ✓ Feedback and information
- ✓ Promotion of political support
- ✓ Framework for certification and containment

Financial support:

- ✓ Technical support staff
- ✓ Training
- ✓ Evaluations
- ✓ Monitoring and supervision

Rotary International PolioPlus Programme**Technical assistance:**

- ✓ Advocacy at all levels for poliomyelitis eradication
- ✓ Community contacts and influence, including among minority groups
- ✓ Volunteer support to immunization centres during NIDs
- ✓ Incentives and promotional items
- ✓ Enhancing awareness of AFP surveillance

Financial support:

- ✓ Social mobilization
- ✓ Vaccine
- ✓ Incentives and promotional items
- ✓ Operational support, allowances
- ✓ Surveillance activities of AFP
- ✓ Vehicles

- ✓ Poliomyelitis laboratory equipment and supplies, support for training
- ✓ Central coordination staff at WHO
- ✓ Other areas of immunization services (including hepatitis B vaccine)

Many other nongovernmental organizations, such as the International Federation of Red Cross and Red Crescent Societies, Médecins sans Frontières, Medical Emergency Relief International (Merlin), Doctors of the World and International Medical Corps provided technical assistance and operational support in many countries and areas where they were working. In addition, the United Nations Foundation has provided support to the regional offices for supplementary immunization operational expenses, the certification process and coordinating the laboratory containment of wild polioviruses.

United Nations Children's Fund (UNICEF)

Technical assistance:

- ✓ Planning
- ✓ Technical support at regional and national levels
- ✓ Training
- ✓ Cold chain assessment and development
- ✓ Evaluation
- ✓ Assistance in evaluating resource needs
- ✓ Development of reporting
- ✓ Social mobilization
- ✓ Major assistance in negotiating "days of tranquillity".

Financial support:

- ✓ Technical support staff
- ✓ Vaccine
- ✓ Cold-chain equipment
- ✓ Transport and allowances where needed.

United States Centers for Diseases Control and Prevention (CDC)

Technical assistance:

- ✓ Planning
- ✓ Training
- ✓ Assessment of surveillance
- ✓ Outbreak investigation
- ✓ Special virology laboratory investigations and consultations
- ✓ Epidemiological and laboratory expertise when required.

Financial support:

- ✓ Vaccine
- ✓ Training in surveillance
- ✓ Laboratory equipment and supplies (with USAID)
- ✓ Central coordination staff at WHO
- ✓ Country surveillance activities
- ✓ Communication and feedback (publications and coordination meetings).

United States Agency for International Development (USAID) directly or through an implementation partner, BASICS**Technical assistance:**

- ✓ Planning
- ✓ Assessment of cold chain
- ✓ Managerial training
- ✓ Social mobilization
- ✓ Evaluation of managerial and cost-benefit aspects of MECACAR

Financial support:

- ✓ Training
- ✓ Social mobilization
- ✓ Technical and personnel support for the polio laboratory network
- ✓ Country surveillance activities
- ✓ Communication and feedback (publications and coordination meetings)
- ✓ Other areas of immunization services
 - Cold-chain evaluations and strengthening
 - Regional interagency committee support
 - Self-sufficiency and procurement training

Bilateral Agencies

Many governments through their development agencies provided a range of support, most notably for vaccine and for strengthening national laboratory services. These governments included Canada, Denmark, Finland, France, Italy, Japan, the Netherlands, Norway, Switzerland, and the United Kingdom.

FEEDBACK ON PARTNERSHIP FROM INDIVIDUALS AND ORGANIZATIONS PARTICIPATING IN OPERATION MECACAR

The responsiveness of partners to government requests, and regular feedback on programme outcomes were critical to the successful partnership of Operation MECACAR.

National and international representatives participating in the sixth coordination meeting, held in Ankara in October 1999, devoted a full plenary session to discussing partnership. As the individuals and the organizations most intimately involved in Operation MECACAR, their experiences and opinions are not only critical in appraising factors leading to the success of the initiative but also for potential application in future partnerships.

A questionnaire had been previously circulated to 12 countries and areas (ten in the European Region and two in the Eastern Mediterranean Region). All survey respondents believed that the Operation MECACAR partnership was important or critical for the success observed and also that partner coordination at the national level was important. The essential components of success were considered to be leadership – of the national immunization programme managers and of the WHO regional offices – and clear regional and national objectives and plans. The factors cited as particularly critical for the successful partnership of Operation MECACAR were: the responsiveness of partners to government requests; regular feedback on programme outcomes; transparency and accountability of fund use; the opportunity for dialogue; and openness to suggestions. The respondents also indicated that the coordination and partnership of Operation MECACAR could be further improved by capitalizing on the individual strengths of each partner agency identifying partners with common interests, and by enhancing transparency and information sharing.

Additional points made during discussion of this session in Ankara were:

- partnerships are very valuable for enhancing technical quality, human and financial resource mobilization, avoiding duplication and maintaining advocacy;
- effective partnership requires leadership, information flow and feedback, and opportunities for recognition;
- partnerships are most effective when common goals are defined, short and medium-term plans of action prepared and detailed budgets established;
- for optimal effect, partnerships are necessary at the international, regional, national and sub-national levels;
- establishing effective national interagency coordinating committees could assist in a range of health interventions;
- the frequency of common meetings, the agendas and the selection of appropriate participants are critical if programme needs are to be defined and the realities of implementation are to be properly included in planning;
- where various sanctions, political or financial, exclude the possibility of full partnership, informal discussion in coordination meetings is still valuable;

- Operation MECACAR was widely seen as very effective in developing consensus on technical issues, coordinating supplementary immunization activities across borders, providing feedback and sharing lessons learned among countries/areas;
- most participants felt that Operation MECACAR meetings should continue in order to discuss a range of cross-border issues and to continue sharing experiences and lessons learned;
- cross-border meetings allow the addressing of immediate operational constraints most effectively when participants are from epidemiological blocks, that is, with common geography, epidemiology, levels of development and access to services;
- there is a clear need for improved communication and shared objectives among all operational staff such as immunization programme managers, laboratory staff and also those with responsibility for social mobilization;
- the more recent coordination meetings of Operation MECACAR had not been as successful in immediately mobilizing resources, attracting new partners or in providing opportunities for political advocacy as had earlier meetings; and
- specifically for Operation MECACAR, the recent lack of additional involvement of bilateral donors and foundations as its successes increased was noted with regret and it was suggested that WHO should increase dialogue with such agencies.

Mopping-up
immunization in
Mardin province,
Turkey 1999



The vaccination
team for rural areas
of Baghdad during
NIDs, Iraq 1999



ANALYSIS OF OPERATION MECACAR

ACHIEVEMENT OF OBJECTIVES

Operation MECACAR has been an overwhelming success. The coordination and the partnership exemplified within the Operation have been extended to other WHO regions, with the Eastern Mediterranean and African regions coordinating NIDs in the countries of the horn of Africa since May 1999 and with the recent efforts in all western and central African countries to synchronize NIDs.

Within the European Region, poliomyelitis caused by wild poliovirus has been apparently eliminated from the MECACAR area. The last case of poliomyelitis to date in the European Region occurred on 26 November 1998 in eastern Turkey. The underlying weaker routine immunization services of southeastern and eastern Turkey and shared population subgroups across borders allowed the circulation of polioviruses there to continue longer than in other areas of the Region. However, by improving both surveillance and the quality of supplementary immunization activities from the autumn of 1998 onward (through enhanced planning, supervision, monitoring and logistical support), workers were able to reach previously unimmunized children. Coordination of activities across borders with neighbouring countries, including Iraq, is and will continue to be important to ensure the interruption of transmission in the entire area of shared population subgroups. Proof of the interruption of poliovirus transmission will demand further observation and strengthening of surveillance and virological testing of all childhood cases of AFP.

Within the MECACAR countries and areas of the Eastern Mediterranean Region there has been a dramatic decline in reported polio cases, in spite of substantial strengthening of surveillance and, therefore, more complete reporting. Among the eight participants of Operation MECACAR in the region, five – the Islamic Republic of Iran, Jordan, Palestinian Self-Rule Areas, Lebanon and the Syrian Arab Republic– have no evidence of continuing endemic transmission. In 1999 and through to early 2000, Iraq had virological evidence of ongoing transmission but energetically responded to control and interrupt poliovirus circulation. The last reported case in Iraq with virological confirmation to date had onset on 28 January 2000 with strengthened AFP surveillance and

ACHIEVING THE OBJECTIVES OF OPERATION MECACAR

Objective	Level of achievement
1. Provide an appropriate mechanism for activities leading to polio elimination over a large intercountry area.	Achieved completely in all countries and areas where access to all communities was possible: logistic support and supervision now enhanced to extend access to children of all areas.
2. Achieve polio elimination.	While probably achieved in most countries and areas, this is not yet complete and will require continued activities until the objective is finally met.
3. Development of AFP surveillance.	This is now established in all countries and areas and is both detecting AFP cases and achieving improved effectiveness, as shown by current performance indicators. Without Operation MECACAR, this would have taken much more time.
4. Development of laboratory network.	This is established and is now capable of investigating samples from a high percentage of AFP cases with high accuracy. Although all specimens from AFP cases since 1999 have been examined in WHO-accredited laboratories in both WHO regions, there is still a requirement for further accreditation and for better liaison between laboratory and operational staff.
5. Advancement of reporting systems.	Successful. All countries and areas are now reporting weekly to WHO and are using performance indicators to monitor progress and technical achievement.
6. Promotion of partnership.	The promotion of partnership between countries/areas and agencies and among agencies has been conspicuously successful, with much improved joint planning and consultation both in the coordination meetings and as a routine.
7. Production of data for certification.	National committees to evaluate and submit data to the regional certification commissions for eventual certification of polio eradication have now been established in almost all countries and areas. National surveillance systems are routinely gathering data that will be essential for eventual certification.
8. Promotion of enhanced intercountry cooperation for the control of other communicable diseases.	This has not yet been well developed, although there is little doubt that the mechanisms put in place for polio eradication have helped in the campaign to control diphtheria and will be vital if improved measles control/elimination is to be a reality.

prompt testing of specimens, indicating likely interruption of transmission. This could mean the extinction of the type 1 genotype previously circulating in the border areas of this and neighbouring countries. Pakistan has a markedly reduced incidence throughout the country. The increase in reported cases in Pakistan in 1997–1999 reflects both the occurrence of a widespread epidemic in 1997 and progressively improved AFP surveillance over time, which resulted in cases being more consistently and completely detected and reported. Despite even stronger AFP surveillance in 2000, a record low number of polio cases has been provisionally reported. In Afghanistan, data are too incomplete to be able to assess levels of transmission, but the fact that supplementary immunization has progressively developed into countrywide NIDS is remarkable in itself; also noteworthy is the fact that surveillance has developed to the current extent, with fewer cases being provisionally reported in 2000 than in 1999 despite these improvements in the extent of surveillance.

Although there appears to be a less dramatic impact of Operation MECACAR in portions of the Eastern Mediterranean Region than in the European Region, the results are actually consistent. In Pakistan and in Afghanistan, baseline immunization coverage in 1994 and some years subsequently was at a much lower level than in the European MECACAR countries. Accordingly, on average, children have received fewer doses of OPV and the protective effect is proportionally less. In addition, problems imposed by conflict, crowding and poor standards of hygiene can all contribute to a reduced impact of the NIDs. It can be expected that continuing the same strategies in these countries (acceleration of the number and particularly the quality of supplementary immunization rounds) will, shortly, produce a similar result.

The Operation has been no less successful in meeting secondary objectives. Laboratory-supported AFP surveillance, although still incomplete in some critical areas, is now well established and is in the process of providing data for the eventual certification of poliomyelitis eradication. The panel opposite summarizes the perceived achievement of the objectives defined earlier in this report.

FACTORS CONTRIBUTING TO OPERATION MECACAR'S SUCCESS

Technical basis

The principle on which Operation MECACAR was conceived – that is, the coordinated and synchronized delivery of a vaccine of known effectiveness to all children, including probable susceptible individuals, across a wide geographical area – was appropriate and epidemiologically sound. For a communicable disease such as poliomyelitis, in which most of the infections are subclinical, where the transmission of the agent was widespread but resulted in relatively few cases (with occasional major epidemics), it was probably the most effective, the most reliable and the most cost-efficient way of interrupting endemic transmission and finally removing the threat of continuing disease.

Contribution of individual countries and areas

To be successful, Operation MECACAR had to ensure the enthusiastic participation of all the individual countries and areas in an initiative that, while clearly to each country's benefit, also involved a collective responsibility for controlling the disease over a wide geographical area. Not only did the original MECACAR countries and areas fully and enthusiastically cooperate together over a number of years, but, as transmission occurred outside Operation MECACAR's limits, other neighbouring countries later joined the initiative in implementing appropriate strategies. This resulted in countries and areas covering a vast geographical area, comprising most of the European Region and a major part of the Eastern Mediterranean Region, collectively instituting the WHO recommended strategies for poliomyelitis eradication in coordination. The evident impact on the disease over most of this vast area is a testimony to the achievement.

Technically, the success of Operation MECACAR depended on reaching virtually all children in the target age group with supplementary doses of vaccine during a very short period of time in the low season of poliovirus transmission. This was successfully achieved through the NIDs, (with virtually all countries and areas involved reaching over 90% of their target group, usually over 95%) and in mopping-up. In order to achieve this it was necessary to plan for a number of key factors. These included a very strong commitment from the various ministries of health and from national immunization programme managers and other staff exercising a high level of technical, motivational and managerial skills.

Within countries and areas, success in achieving social mobilization, intersectoral cooperation, and the coordinated involvement of leading figures and personalities often depended on the strong involvement of leaders at the highest national level. The extension of responsibilities from ministries of health to other governmental sectors, nongovernmental organizations and to the community was a key factor in the success of Operation MECACAR. The commitment of national leaders, clearly demonstrated as they opened campaigns by immunizing the first children, with full media coverage, was of considerable importance.

Conducting NIDs, and continuing them for many years, involved a commitment of time, personnel and finance that placed additional burdens on frequently stretched national budgets. That no country had to renege on its promises is not only a credit to the commitment of ministries of health, but also reflects the outstanding efforts made to raise additional funding at the national, provincial, district and community levels.

Coordination among all parties concerned

The capacity and support in assisting health ministries to organize NIDs also reflects the strong coordination taking place within countries/areas among government, international agencies, na-

tional NGOs and representatives of all levels of society. Without this enhanced cooperation and development of partnerships, it is doubtful whether the success would have been so comprehensive. Equally, on the international level, the role of the WHO Regional Offices and their staff, both administrative and technical, plus the contributions from UNICEF and Rotary International and other external partners, were absolutely critical for success and cannot be underestimated.

On the technical level, it is essential to stress the critical role of the coordination meetings in which all countries/areas and agencies were fully and appropriately represented. This forum had a critical role in planning and coordinating activities, reviewing progress, sharing experiences and in discussing further technical developments beyond the limited scope of the NIDs. Without them and their effective conduct, Operation MECACAR could not have functioned so well.

Extension of Operation MECACAR beyond coordinated NIDs

An important element was also that the technical aspects of Operation MECACAR were extended beyond the originally planned NIDs to include development of effective AFP surveillance, and accreditation and use of the poliomyelitis virological laboratory network. Most importantly, the introduction and implementation of the concept of performance monitoring and evaluation and the use of standard performance indicators has provided a quantification of the progress and will, eventually, make it possible to certify the elimination of poliomyelitis from the two WHO regions, and thus contribute to the ultimate certification of global poliomyelitis eradication.

LASTING BENEFITS OF OPERATION MECACAR

The four lasting outcomes of Operation MECACAR are:

- the fact that poliomyelitis will have been eliminated when, otherwise, it either would not have been or would have taken far longer, with many unnecessarily disabled children;
- the development of a much strengthened capacity for laboratory-based, standardized surveillance and consequent communicable disease control;
- the demonstrable willingness of non-health sectors and communities to be involved in health and humanitarian programmes; and
- the demonstration that international cooperation in infectious disease control is not only possible and effective, but is clearly and enthusiastically welcomed by the Member States of each region.

THE FUTURE OF OPERATION MECACAR

Although strikingly successful to date, Operation MECACAR has not yet quite completed all its objectives. When the original three years of Operation MECACAR had been completed, it was clear that additional activities needed to be continued and accelerated, under Operation MECACAR Plus. Discussion at all the most recent coordination meetings stressed the need for

continuing well-coordinated activities into the future until certification of global eradication of poliomyelitis. As we enter 2001, fewer MECACAR countries and areas are now conducting full NIDs, and some MECACAR countries in the European Region will no longer need to conduct any supplementary immunization. Because the risk of cross-border importation of wild polioviruses will remain, coordinated Operation MECACAR Plus supplementary immunization activities will continue in key countries and areas at least up to and including 2003, even if AFP surveillance should meet all necessary performance indicators and routine immunization services reach consistent and sustainable high coverage.

The risk of unrecognized cross-border poliovirus transmission persists in two main areas: the Islamic Republic of Iran, Iraq, Turkey and the Syrian Arab Republic, and, more likely, in Afghanistan, the Islamic Republic of Iran, Pakistan, Tajikistan, Turkmenistan and Uzbekistan. Continuing virus circulation in Afghanistan and Pakistan represents the major source for distant importations in both WHO regions, although importations from the continuing reservoirs in India and areas of Africa could also occur. Future MECACAR activities must build on the successes already achieved and extend them to ensure complete success.

Continuation of Operation MECACAR Plus means:

- continued coordinated supplementary immunization campaigns, where indicated (see Table 7 for proposed activities in 2001–2003);
- coordinated action to improve AFP surveillance, with particular focus on high-risk areas;
- continued coordination among recently endemic countries and areas in order to achieve global certification of poliomyelitis eradication by the year 2005; and
- sharing of successful activities towards laboratory containment of wild poliovirus and potentially infectious materials.

In addition, laboratory support and specimen transportation will be further strengthened to ensure that all countries and areas and their constituent districts have easy and expedited access to WHO-accredited laboratories.

A MECACAR coordination meeting is now planned for March 2001 in Cairo. With the successes achieved in Operation MECACAR and future actions towards poliomyelitis eradication now clear, discussion among MECACAR participants and partners in 2001 could also begin to include other communicable disease control and elimination programmes of shared interest as opportunity for continued intercountry and interregional collaboration, including the shared target of regional elimination of measles.

Table 7.
Proposed supplementary immunization activities and timing in MECACAR countries and areas, 2001-2003

		Eastern Mediterranean Region								European Region										
		Afghanistan	Islamic Rep. of Iran	Iraq	Jordan	Lebanon	Pakistan	Syrian Arab Republic	Palestinian Self-Rule Areas	Armenia	Azerbaijan	Georgia	Kazakhstan	Kyrgyzstan	Russian Federation	Tajikistan	Turkey	Turkmenistan	Uzbekistan	
2001	Jan		CB1				N1													
	Feb		SN1	CB2																
	Mar		N1		N1	N1	SN1	N2	SN1						M1					
	Apr		N2		N2	N2	SN2	N3	SN2						M2	N1 ¹	SN1	N1 ¹	N1 ¹	
	May		N3													N2 ¹	SN2	N2 ¹	N2 ¹	
	Jun																			
	Jul		M1					M1												
	Aug		M2					M2												
	Sep		N1					N1												
	Oct			SN1	N1				M1							SN1	M1	SN1	SN1	
	Nov		N2	SN2	N2			N2	M2							SN2	M2	SN2	SN2	
	Dec																			
2002	Jan																			
	Feb							N1												
	Mar		N1		N1	SN1	SN1	N2												
	Apr		N2		N2	SN2	SN2									N1	SN1	N1	N1	
	May															N2	SN2	N2	N2	
	Jun																			
	Jul		M1					M1												
	Aug		M2					M2												
	Sep		N1																	
	Oct		N2	SN1	SN1			N1	M1							SN1	M1	SN1	SN1	
	Nov			SN2	SN2			N2	M2							SN2	M2	SN2	SN2	
	Dec																			
2003	Jan																			
	Feb							N1												
	Mar		N1		N1			N2												
	Apr		N2		N2											SN1	M1	SN1	SN1	
	May															SN2	M2	SN2	SN2	
	Jun																			
	Jul																			
	Aug		M1																	
	Sep		M2																	
	Oct			SN1	SN1			M2	M1							SN1	M1	SN1	SN1	
	Nov			SN2	SN2				M2							SN2	M2	SN2	SN2	
	Dec																			

N1: National Immunization Days, 1st round
 N2: National Immunization Days, 2nd round
 N3: National Immunization Days 3rd round
 SN1: Sub-National Immunization Days, 1st round
 SN2: Sub-National Immunization Days, 2nd round
 M1: Mopping-up, 1st round
 M2: Mopping-up, 2nd round
 CB: Cross-Border; other limited cross-border immunization corresponding to activities in neighbouring countries and areas
 CB1: Cross Border 1st round
 CB2: Cross Border 2nd round

¹ NIDs have been planned for spring 2001 but the international shortage of OPV supplies will prevent their implementation at least until the autumn.

Melik Minas, last polio victim in the European Region in Agri province, Turkey 1998



EPILOGUE

PERSONAL RECOLLECTIONS ABOUT SOME PERSONS BEHIND OPERATION MECACAR

By Doctors Rafi Aslanian, Nedret Emiroglu, Hamid Jafari, George Oblapenko, M.H. Wahdan

The success of Operation MECACAR was due to the planning, the active support of national health authorities, the partnership of international and national organizations... and the hard, hard work and motivation of the operational field staff. The people behind the various aspects of the programme made the Operation what it was and is.

July 1994

Early in the morning, during a WHO polio eradication planning session in Atlanta, two of us (George and Rafi) were preparing for the final discussion about future activities and we were excited about the previous day's presentation by Dr Nicolas Ward on organizing national efforts around World Health Day 1995. And so, as we were discussing our own options, we placed on the table a dream to join efforts in the endemic countries of the two WHO regions that share a long border and shared plenty of wild polioviruses.

January 1995

At the first coordination meeting in Ankara, all countries agreed to participate in the Operation but only two months remained to prepare field operations. In addition, there was a funding shortfall of 5 million US dollars. Rotary International managed (practically overnight!) to transfer that amount to UNICEF/New York after which Mr Hyuk Soo Kwon and other UNICEF staff in Copenhagen worked hard to ensure that vaccine would be delivered in time, calculating every single cubic centimeter of available cargo space.

April 1995

I visited Kazakhstan to conduct an evaluation of the first round of NIDs. During evaluation, the team visited one district close to the border with China and met a local ophthalmologist riding a horse carrying OPV vaccine on the way. He was returning after the immunization session in a small hamlet. When we asked him about his experience, he responded, “I feel great! I have just immunized 17 children in that very remote place. You know, today 18 countries started an operation to eradicate poliomyelitis. I am very proud to be a part of that.”

March 1997

We left Tehran, Islamic Republic of Iran early in the day to make sure we arrived in the western border province of Kurdistan not too late after sunset. The WHO regional offices and involved countries had just begun to focus attention on the poliovirus reservoir that involved the area bordering northwestern Iran, northeastern Syria, northern Iraq and southeastern Turkey. We split into two teams on the following day, one covering provinces of the south and the other traveling north.

Iran was the only country in the Region at that point that had conducted NIDs during which every single household in the country was visited. The impact of these massive undertakings was immense, but we were still not in a position to know with certainty whether Iran had interrupted indigenous virus transmission, even with the available laboratory data. Even if it had been interrupted, similar viruses to what was in Iran in years past were circulating in Iraq and Turkey to the west and Pakistan and Afghanistan to the east.

As we drove, we were talking among ourselves about the uniqueness of the Iranian public health system with the vice chancellors of medical universities being responsible for disease surveillance. The public health system in Iran was well decentralized but two public health veterans in the country were coordinating the polio eradication program centrally in Tehran. One of them, Dr Parviz Vazirian who was the overall coordinator of immunization and surveillance activities for polio eradication, was accompanying us. With good humor we kept challenging him during the drive about the weaknesses we could find in the field. In return, Dr Vazirian recited famous couplets of Hafiz, the 13th century mystical poet from Shiraz, a demonstration of the confidence he had in his program.

Next day we drove to Qasr-e-Shirin near the Iraqi border. This province was the seat of Khusro Pervaiz the famous king of ancient Iran. The mythical love story of his queen Shirin, and her lover Farhad (who dug a mountain canal with only a pick axe to win her love) was played out thousands of years ago in what is now the town of Kermanshah. We were struck by the number of nomadic

tribes and families that were on the move in this rugged terrain. It was our hosts' turn to challenge us now by asking us if we could find any unimmunized children among the nomads. Remarkably indeed, all the nomadic families we stopped to interview had vaccination cards and their children were immunized. As we learned later, even the 60-day follow up of AFP cases among nomads was completed through proper tracking of these mobile groups. Dr Vazirian recited some more Hafiz.

September 1997

On my first visit to Afghanistan, several WHO consultants and I had driven from Islamabad via Peshawar the day before to participate in a workshop on surveillance. We had crossed the border through the famous Khyber Pass where a large plaque informed the visitors of the historical significance of this pass. This was the main passageway for the numerous philosophers, writers, poets, sufis, preachers, kings and conquerors from central Asia who made their way to the Indian sub-continent and heavily influenced its culture, history and traditions during the previous millennium. Decades of armed conflict in Afghanistan were immediately apparent as we rattled in the land cruiser that jumped along the shell-pocked road to Jalalabad. Following a few multiantigen mass campaigns, Afghanistan had conducted its first polio NID early in 1997 but was the only MECACAR country that had no AFP surveillance. We knew from recent evaluations of patients obtaining services from rehabilitation clinics that, in addition to injuries from land mines, poliomyelitis remained a major cause of disability in Afghanistan.

What unfolded during the three days of the workshop was nothing short of a major programme transforming exercise. We were remarkably impressed by the capacity of the national staff to absorb complex technical information and use it to devise a brilliant operational plan for surveillance based on case detection and reporting through active surveillance visits to selected "sentinel sites" in the capital cities of each of the regions. The stool specimens were to be flown on United Nations' flights out of Afghanistan to the regional reference laboratory in Islamabad, Pakistan. In subsequent phases, surveillance would move down to provincial and district levels. The system started with 37 sentinel sites and by end of 2000 has expanded to nearly 200 reporting sites in more than 110 districts. Many of the major reporting sites are now also reporting measles and neonatal tetanus cases. The AFP surveillance system in Afghanistan turned out to be the template that was used to establish surveillance systems in many other conflict-affected areas of the world.

August 1998

Closer to its source, the water of the Euphrates is a deeper shade of green in the Syrian Arab Republic compared with the colour seen in Iraq. Syria had already conducted several house-to-house mopping up campaigns in high-risk border districts and towns near Iraq and Turkey. I was struck by the absence of city slums in Syria and noted markings left by immunization teams on houses during house-to-house campaigns. It was impossible to find unvaccinated children. Dr Osama and I spent two full days visiting urban and rural districts of Aleppo governorate reviewing AFP cases, surveillance data, and campaign planning.

Next day we drove to the district of Ain-al Arab and visited the cleanest and most impeccably organized district health center I have ever seen. The director of the local district health was a physician who had trained in Austria and settled in Vienna, then decided to return to his village of origin. He insisted and took us home for lunch. He lived on the edge of town, in fact on the edge of Syria, since it was from his front yard that I could see the houses in the province of Sanli Urfa, inside Turkey, where in the preceding months a number of virus-confirmed polio cases had been identified.

September 1998

Dr Niama Abid Said from Ministry of Health, Iraq and I discussed the recently identified and ongoing outbreak of diphtheria in the Nineva governorate. After dinner we visited the shrine of the prophet Jonas on top of the hill in the town of Mosul. Later in the evening we decided to create a computerized line-list in the candlelight based on the information on diphtheria cases in possession of Dr Said. Analysis revealed that the outbreak seemed to have started in an ethnic minority group that resisted vaccination and the center of the outbreak was located in the district of Sinjar. Armed conflict of considerable intensity was ongoing in the three northern governorates of Iraq. We met various public health staff and UNICEF colleagues in Erbil and Dohuk and learned about the extreme challenges polio eradication faced in this part of the world. Upon return to Baghdad, the mission team prepared a report with a long list of recommendations. Most remarkably, the authorities in Iraq rose up to the challenge and successfully implemented each and every recommendation towards a highly sensitive AFP surveillance system and a functioning national laboratory. It was this surveillance system that led to the identification of the last polio outbreak in mid-1999. The first identified cases of the outbreak also appeared in Sinjar district in the same ethnic minority. The authorities and the health workers in Iraq again rose up to the challenge of the outbreak and conducted high-quality house-to-house immunization campaigns that have led to the apparent interruption of virus transmission in Iraq.

October 1998

From the beginning of the polio eradication programme in Turkey, the polio cases occurred predominantly in certain ethnic groups in the southeast and east. Sanli Urfa is a large province in that area of Turkey, which historically had accounted for a large proportion of the polio cases in Turkey in the many years before. With the NIDs since 1995, it was clear that a large number of parents were actively avoiding vaccination of their children. During the mopping-up campaign underway, district health workers reported that the parents in one of the remote villages of Halfeti district particularly were avoiding vaccination of the male children, even if allowing vaccination of the females, thinking that it could sterilize the males. In fact, the cases of polio seen in that year included an unvaccinated 18-month-old boy from Mus whose three sisters had received vaccine in the NIDs while he was hidden from the vaccinators by his grandmother, just months before becoming paralyzed. Dr Necip Yemenici from the provincial health office decided to take matters into his own hands. He had been impressed by the global polio eradication effort and took the message to heart that “We cannot afford to have a single child missed”. He took his team back to the village and met with the village head. As they together started to go house-to-house, he realized that he would need to do something extra to convince parents of OPV safety. As a newly married man, he told the parents at the first house that if it were not safe, would he take it? – and proceeded to give OPV drops to himself. Seeing that this broke the reserve, he then went on to demonstrate the safety by vaccinating his team members. This maneuver worked, so he went house-to-house, at each opening a fresh vial of vaccine to demonstrate for each reluctant parent how safe OPV was – and taking in almost 100 doses himself that day. His example was related throughout the province, and mopping-up monitoring that autumn indicated extremely high coverage. In addition to the high degree of planning and supervision to make the mopping-up succeed, the reluctance of some of the population was reduced.

Because there are thousands and thousands of persons who worked to make Operation MECACAR succeed, there are thousands of stories to tell. As this hard work serves as an example for the rest of the world to follow, global polio eradication will be realized. The health of children in MECACAR countries will continue to be enhanced as this strong coalition works to further strengthen both AFP/virological surveillance and routine immunization programmes.

Across eleven time zones, also this child in Moscow joined the NIDs, Russian Federation 1998



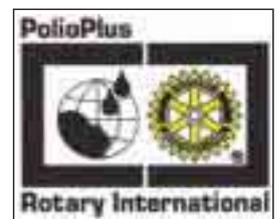
Clinical expert in poliomyelitis examines a child with acute flaccid paralysis, Azerbaijan 1999



PARTNER STATEMENTS

ROTARY INTERNATIONAL

“For me you come too late,” whispered Mihail in his wheelchair when I approached him during the opening ceremony of the NIDs in Chisinau, Republic of Moldova in September 1996. The 12-year-boy was one of the three dozen children packed into the main hall of the polyclinic along with parents, grandparents and guests. He had brought his younger brother to be vaccinated “so he will not experience the same fate”. His words still sound in my ears and I vowed I would never have to hear them again.



Rotary International started its collaboration with the WHO Regional Office for Europe in 1993, after its successful intervention in the Americas. A Central and Eastern European Countries PolioPlus Project Committee, later called European Regional PolioPlus Committee, was formed:

- to support the vaccine supply in central and eastern Europe, Caucasus and central Asia;
- to exert advocacy, motivating Governments to persist in strengthening immunization and support of activities of social mobilization;
- to motivate the governments of the developed countries and the European Union, NGOs and relief agencies to cooperate in this endeavour by providing financial and material resources for vaccine supply, laboratory implementation and improvement, and a variety of equipment; and
- to obtain the personal commitment of Rotarians in helping to set up efficient laboratory-based surveillance systems in all countries and areas fighting for the eradication of polio. With over 300,000 Rotarians in the European Region, including the former communist states, Rotary was in the best position to mobilize its members for the polio campaign.

A central point in the cooperation with the Regional Office was the 1994 partners meeting in Kyoto. Here the Interagency Immunization Coordination Committee was established, for which Rotary provided the chairmanship, and which became the large coalition of governments, international agencies and NGOs that developed Operation MECACAR. MECACAR was the first multinational coordinated effort of its kind which successfully engaged 18 countries and areas

across two different WHO regions to immunize their children simultaneously. Rotary's primary roles within the coalition have been the provision of polio vaccines, the promotion of vaccine self-sufficiency in polio-endemic countries, the mobilization of volunteers to help in immunization campaigns, the coordination of efforts among coalition partners, advocacy efforts on behalf of polio eradication and support to the laboratory network, surveillance and social mobilization.

In addition to the commitment of financial support to MECACAR, Rotary took an experimental approach to NIDs with the Ministry of Health in Bulgaria, where social mobilization was carried out to ensure that all children were included in the immunization campaigns. Similar support activities took place in the Republic of Moldova, Romania, the Russian Federation, Ukraine and the Federal Republic of Yugoslavia. A successful approach to the Roma minority communities of Bulgaria and Romania brought many previously reluctant parents forward to vaccinate their children for the first time. The problem of those minorities either neglected or not using government services presented a unique opportunity for Rotary to intervene. With its neutral position, removed from any political influence and partiality, Rotary had the legitimacy to convince the Kosovo Albanian leadership to accept vaccination of their children by the Serb health authorities, the Roma community to overcome prejudices, and the ethnic minorities in Bulgaria, Romania and elsewhere to benefit from NIDs under the umbrella of MECACAR.

During the years of Operation MECACAR, the European Region was confronted with many challenges. One of them was the large outbreak of poliomyelitis in Albania in May to November 1996. Fortunately, with the support of Rotary and other sources, two rounds of NIDs had already been conducted for children from 2 months to 5 years of age in the spring 1996, thus sparing this age group from polio disease; incidence rates of illness during the outbreak were therefore highest among persons 10 years and older. With broad international assistance, two rounds of mass vaccination for outbreak control were conducted, bringing the epidemic to a halt. A more difficult problem was Kosovo, where border circulation and low population immunity favoured the transmission of the virus. In a crash operation coordinated by WHO, Rotary supported the vaccination of all children of the 6 to 16 age group in all schools in addition to the already planned sub-NIDs for younger children in Kosovo. As a result of special efforts, two more rounds of sub-NIDs were again implemented each year in 1997-1998.

In addition to continuing the supply of vaccine to the other members of Operation MECACAR, Rotary's efforts concentrated on Turkey in 1997, and the elimination of the last remaining chains of poliovirus transmission through door-to-door vaccinations in the high-risk regions. This resulted in a raised level of immunity in the whole population, including the common ethnic minorities in the wild poliovirus reservoirs of northern Iraq, southeastern Turkey, and northern Syrian Arab Republic. The financial commitment of Rotary and others in the coalition and the

involvement of local Rotarians in social mobilization and surveillance was crucial for the success of the operations and for achieving the apparent polio-free status of Turkey today.

Substantial efforts were also undertaken to strengthen the network of laboratories in both WHO regions and to improve the quality of AFP surveillance for the reliable detection of wild poliovirus transmission. The PolioPlus Partner Programme of The Rotary Foundation has provided considerable assistance to the laboratory network and to surveillance and investigation activities, both of which are needed to achieve the necessary standards of virological surveillance for certification. Laboratory equipment, computers and software, other office equipment and supplies, and specimen cold-chain carrier and collection kits to the total value of more than US\$ 1 million were provided to the European Region. Rotary was moved by the conviction that the development and use of the WHO-accredited laboratory network is of paramount importance not only for the reporting system of surveillance but also for sharing epidemiological information among agencies and countries long after the eradication of polio is completed. Accordingly, Rotary provided key support for the European Polio Laboratory Coordinator and advocacy to encourage other national governments to upgrade their laboratories as a part of the global polio network.

Rotarians in all European countries where Rotary exists have proven themselves well suited to handle some of the vital promotional and logistical steps, from increasing the demand for immunization to securing vaccine, transporting it and seeing that it is safely administered. Rotarians worldwide supported local Rotarians in their social mobilization activities, generating community support for polio eradication. Using a variety of promotional means, Rotary clubs helped to inform the public about the critical need for polio immunization. By supplying vehicles and vaccine carriers, they ensured that vaccine arrived safely and on time at immunization sites.

Polio eradication is too big a job for any single organization to do alone. Operation MECACAR is a prime example of the results that can be achieved through the cooperation of governments, government agencies, and private organizations with the international agencies of the United Nations. WHO's strong leadership and technical guidance in this important coalition was crucial in successfully meeting the challenges of polio eradication in pockets and entire areas at high risk, and in halting the transmission of the virus across borders. UNICEF's ability to procure vaccine of high quality at low cost and deliver it in a timely fashion, as well as its social mobilization activities ensured that oral polio vaccine was available when needed and administered. Only through this common effort was it possible to deal with and solve all the problems.

Rotarians are undertaking advocacy for polio eradication with new fervour through a special Task Force. This high-level advocacy and fundraising activity is accomplished through the efforts of its network spanning all levels of government and private enterprise. In this way, Rotary alerted

the authorities of European countries and the European Union to the financial shortage of the various campaigns. Together they contributed over US\$ 50 million to the global effort.

The benefits from learning how to work cooperatively will have many future rewards in addition to the eradication of polio. Interagency cooperation can be effective in many other public health interventions. Relationships among the private sector, governments and intergovernmental agencies are much stronger and specific roles for each group are now being determined in other programmes. The contribution made by public health workers to the success of a programme has also been recognized, ensuring continued acknowledgement of their role in the future.

The cooperation within the MECACAR coalition was very rewarding. While the US\$ 20 million contribution by Rotary to the European Region was critical in galvanizing global efforts to eradicate polio, the most important contribution of our organization was that of human resource: local Rotarian volunteers at the forefront of immunization activities guided by the proclamation of Past President Rotary International Cliff Dochterman that “the greatest happiness is helping others”.

Dr Mario Grassi

Former Chairman of the European Regional PolioPlus Committee

Massagno, Switzerland

Rotary's PolioPlus Committees in Jordan, Lebanon and Pakistan have played key roles in advocacy, social mobilization and implementation in the polio eradication efforts in these MECACAR countries of the Eastern Mediterranean Region of WHO. The advocacy efforts of National PolioPlus Committees and individual Rotarians led to stronger political commitment and the mobilization of support from both the public and private institutions within these countries, as well as the mobilization of external resources to support OPV and operational costs for NIDs and sub-NIDs, surveillance enhancement and laboratory capacity building. An important direct contribution of Rotarians in these countries was their active involvement in social mobilization activities and in preparation and implementation of immunization campaigns, including manpower for monitoring and assessment of the quality of the campaigns.

Through the support of Rotary's International PolioPlus Committee and the PolioPlus Committee for the Eastern Mediterranean Region, the PolioPlus Committee of Pakistan has been the cornerstone of support to the polio eradication programme there. Rotary International provided a grant to establish the AFP surveillance system nationwide in 1996 as a result of the involvement of the National Committee in partnership with WHO. Since those early days of the programme, the international support from the Rotary Foundation and PolioPlus Partners has continued to flow. The active participation of local Rotarians and the efforts of the National PolioPlus Committee have been recognized at the highest national forums. The Chairman of the Committee is being decorated with a civilian service award by the President of the Republic of Pakistan. The advocacy efforts of the Committee have resulted in Pakistan being one of the few countries that have printed a postage stamp on polio eradication – with the Rotary emblem. The Committee has also been involved in cross-border immunization activities, the planning and monitoring of NIDs in Afghanistan as a part of the WHO team, as well as in participating in inter-regional activities of WHO and UNICEF for bordering countries of the WHO regions for the Eastern Mediterranean and South-East Asia. The Committee gratefully acknowledges and appreciates the valuable partnership with WHO, UNICEF and CDC through MECACAR in strengthening the role and efforts of Rotary International and trusts that this support will continue until we reach our cherished goal of offering a polio-free world to our children.

Mr Abdul Haiy Khan
Chairman, PolioPlus Committee of Pakistan
Islamabad, Pakistan

UNITED NATIONS CHILDREN'S FUND

Since 1995, Operation MECACAR has been a highly effective forum of interregional and inter-country coordination of poliomyelitis eradication activities and the development of a coalition of partners, leading towards the halt of the transmission of wild poliovirus in the European and Eastern Mediterranean regions.



UNICEF offices in the countries and areas of both regions have been actively involved in the planning and implementation of all activities carried out through this operation. National coordination produced a better quality planning and implementation of accelerated activities, with an emphasis on the so-called “unreached children” – children who had not benefited from

polio vaccine in the past and who, for one reason or another, had also not received other basic health services. As a result of these activities, pockets of such children affected by the lack of services have been identified and necessary services provided.

All activities carried out through Operation MECACAR have been planned and implemented as an integral part of the national immunization programmes, providing a positive synergetic effect on each other. The experience gained during this Operation is a valuable asset for future regional and intercountry cooperation in the area of disease control and elimination of such diseases as diphtheria, measles, tuberculosis, malaria and hepatitis B. Indeed, this experience has already been utilized in some of the current programmes.

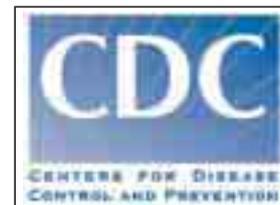
Regular, effective coordination meetings and reviews held during Operation MECACAR greatly influenced the programme direction and allocation of resources, and enhanced partners' understanding of different countries' priorities and needs.

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 UNICEF Middle East and North African Regional Office
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CENTERS FOR DISEASE CONTROL AND PREVENTION

The groundwork for Operation MECACAR began in 1994, when the idea was suggested to build upon the few NIDs that had been conducted up to that time in some of the countries and areas of the WHO European and Eastern Mediterranean regions to create a solidly coordinated effort to interrupt poliovirus transmission across major portions of the European and Asian continents. The key elements of this groundwork were the planning of its scope and objectives, obtaining the cooperation of all national authorities and international partners, and coordinating its timing and execution. All these elements came together because of the vision, persistence and professionalism of the founding fathers of Operation MECACAR, Drs George Oblapenko and Rafi Aslanian, of the respective two WHO regions. The continuing partnership that we call MECACAR continues to be a model for the other partnerships of CDC in the global poliomyelitis eradication initiative – effective partnerships being absolutely necessary in order to reach the eradication goal – with the following shared concepts:



Opportunity: the opportunity to participate in programme development and implementation. The beauty of a partnership such as MECACAR is that it offers the opportunity for multilateral rather than just bilateral interactions and cooperation, which enriches the quality of the work and the results.

Team work: this concept has at least two components -

- a) sharing responsibility for achieving programme objectives among country public health workers (from district to central levels), volunteers, laboratory workers, bilateral agencies and international organizations; and
- b) drawing on the particular strengths that each international organization brings to the partnership, for example:

- WHO: technical skills, mobilization of political commitment, leadership
- Rotary: advocacy, community mobilization, mobilization of political commitment at the county level, funding support
- UNICEF: country level programme management and implementation
- CDC: technical skills, funding support.

Interdependence: the concept that each country is dependent on the quality of work of its neighbouring countries/areas, and each region upon adjoining regions, since the poliovirus knows no boundaries. This idea brings forth the need for all countries/areas and organizations to help each other, for only in this way will all benefit.

Enhanced communication and coordination: in this way, the partnership can avoid duplication of effort, and increase efficient and effective use of resources. It is like a team of horses that can pull together in a single direction when the pathway is established.

Accomplishment: a network of highly proficient, accredited laboratories with a truly global extent has been created, and immunization delivery and surveillance aspects of public health programmes have been strengthened, along with the meeting of the primary objectives.

Expansion of collective knowledge gained and lessons learned: poliomyelitis eradication, and the experience we have all had with MECACAR, can be a model for the future. Poliomyelitis eradication is the model for building close linkages between modern laboratory science and public health implementation on a global scale. The challenge before us is to translate and extend all these lessons in cooperation learned from Operation MECACAR into cooperation in other areas.

CDC takes this opportunity to thank the countries and areas of the Eastern Mediterranean and European regions, WHO, Rotary International, UNICEF, USAID and all the other partners for the opportunity to participate in, contribute to and learn from this historic MECACAR partnership.

Dr Steve Cochi
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UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

Operation MECACAR/ MECACAR Plus provided countries and areas of the WHO European and Eastern Mediterranean regions with a forum for information sharing, consensus building and problem solving regarding polio eradication and immunization-related issues. By engaging a wide range of partner organizations and interested parties in the coordination meetings and other planning, USAID believes countries/areas will benefit from a broader resource base as well as having a broader base to share and exchange ideas about programme performance. International partners enhance their understanding of national resource needs when there are regular reviews of budgets, financial implications and human resource needs in a manner that is transparent and where countries/areas are accountable for funds as well as results.



Given that communicable diseases respect no borders, Operation MECACAR is in an excellent position to expand its objectives; such cooperation provides a politically neutral venue for discussing problems, challenges and concerns about the spread and control of other selected infectious diseases. The actions needed to control these diseases can be agreed upon and coordinated under the MECACAR umbrella. With the dual purposes of reporting back and using data for action, MECACAR has the potential, with continued strong leadership, to be an innovative mechanism not only for meeting technical objectives but also for advocacy, motivation of health workers, and recognizing achievements. By continuing thorough discussion at coordination meetings, programmatic shortcomings can be addressed – professionally, but directly – and authorities encouraged to take appropriate corrective action after a peer-review process provides consensus recommendations.

Brought together by common needs, countries/areas can help each other to find appropriate, cost-effective solutions to problems that affect us all. Ultimately, MECACAR could help save more lives, reduce costs, and improve the performance of a broad range of immunization and disease control activities in countries and areas under its umbrella.

Ms Ellyn Ogden
Worldwide Polio Eradication Coordinator

Dr Murray Trostle
Senior Immunization Advisor

U.S. Agency for International Development
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U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

Operation MECACAR (Mediterranean, CAucasus and Central Asian Republics) was an innovative public health campaign, specifically aimed at the elimination of poliomyelitis from the participating countries and areas of the WHO Regions for the Eastern Mediterranean and Europe.

It functioned through high levels of coordinated planning and programme implementation and demonstrated the capacity and potential for countries and international agencies to work effectively in partnership to achieve a common goal.

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